FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 27—Number 47 NOVEMBER 19, 1955 1 Year $4, 2 Years $7

Gain Shown In Chick and Poult Output

WASHINGTON—Another new high in chick production was recorded last month. The U.S. Department of Agriculture reported this week that hatchery output of chicks in October was at a record level for the month.

At the same time, production of heavy breed turkey poults showed a sharp increase over a year earlier.

The chick hatch totaled almost 108 million, compared with 86.4 million a year ago.

As may be expected at this time of year, most of the chicks hatched in October were for commercial broiler production. The broiler industry was estimated to have taken slightly more than 92 million of the chicks hatched last month. The 13 principal broiler areas boosted their placements by 25% over a year earlier.

(Also see broiler chick placement table on page 77.)

In spite of low broiler prices recently, demand for broiler chicks has been strong, USDA noted.

The November chick hatch is expected to be a near record for the month. The number of eggs in incubators on Nov. 1 was up 25% from a year earlier.

Government officials said the continued large chick output appears to indicate that there is a considerably reduced cost per pound of chicken meat production, through better feeds and better feeding practices.

Poult Output

Meanwhile, the turkey industry also appears to be looking for broader markets, as indicated by the October poult hatch. Current months of course are normally low for poult production, but USDA senses a trend in the increase in heavy breed poults hatched. The number hatched in October was 161,000, compared with 61,000 last year.

Heavy breed eggs in incubators on Nov. 1 totaled 490,000, compared with 241,000 last year.

In view of the situation, USDA officials are now talking with the turkey industry advisory committee, asking what lies ahead. USDA is fearful that growers, going into an election year, are guessing that they can produce to the maximum and compel the government to enter into a price support program late next fall to bail them out of over-production difficulties.

While heavy breed poult output is up, production of light breed poults continues to decline. The hatch last month was 311,000, compared with 675,000 in October, 1954. Light breed turkey eggs in incubators on Nov. 1 totaled 770,000, compared with almost double that amount a year earlier.

One factor in the heavy breed increase and light breed decline is that more heavy breed type birds are now being marketed at light weights.

STARTING IT UP—Officially starting the new pilot feed mill at Kansas State College is Benjamin Fairless of United State Steel Corp. Mr. Fairless, who was principal speaker at the recent dedication of the feed technology facilities, is shown as he pushed a lever starting the mill in operation. Behind Mr. Fairless are, left to right, B. D. Eddie, Superior Feed Mills, Oklahoma City, chairman of the industry's Feed Technology Advisory Committee; Dr. James A. McCain, president of Kansas State College, and Dr. J. A. Shellenberger, head of the college's department of flour and feed milling industries.

Poultry Feed Mill Under Construction At Tunnel Hill, Ga.

DECATUR, ALA.—Work is progressing on the new poultry feed mill being constructed by the Alabama Flour Mills at Tunnel Hill, Ga., near Dalton, A. L. Johnson, vice president and general manager of the firm indicated this week. The company manufactures Red Hat feeds and is building the new mill to serve a broader section of the southeastern poultry area.

Built of concrete and prefabricated steel, the plant will have a rated capacity of 480 tons daily, Mr. Johnson declared.

A pneumatic system for unloading and handling bulk ingredients is being constructed and provisions are being made for expanding the storage facilities as the need arises. In addition, the mill will have liquid storage tanks for fat and for "Ferma-Gro," growth factor included in Red Hat broiler feeds.

J. J. Schumacher, chief engineer for Nebraska Consolidated Mills Co., Feed mixing will be a continuous flow operation with automatic controls utilizing the most modern equipment, according to the announcement. Omaha, of which Alabama Flour Mills is a subsidiary, is engineer for the construction project. Pearce and Gresham of Decatur is the construction firm.

FEEDSTUFFS FEATURES

Feed men interested in production methods will find a complete review of the recent Midwest Feed Production School beginning on page 10. Pictures from the Feed Technology School dedication at Kansas State College appear on page 3. Among other features is an article on laying hen nutrition on page 58 which includes comments on recent findings on protein-energy ratios.

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Herring Fishermen Start Season Late

VANCOUVER — After several months of negotiations, the British Columbia herring fishermen went to sea the end of the week. The start this season is about three weeks later than usual. The season extends well into next spring but as the season progresses the fish become thinner and lose a good part of their oil content. The season's allotted catch is 40,000 tons.

The herring are mainly processed into meal and oil. The fishermen finally received an increase from the Fisheries Association of British Columbia which amounts to $1.62½ ton for herring used in reduction plant operations and 58¢ ton for edible fish. The new buyers prices are therefore $12.87½ ton for reduction plant catch and $16 for edible.

The inital price quoted by reduction plants for meal is $2.40 per unit of protein, subject to pack. This is the asking price, but reports here are that buyers have shown no inclination to place orders, believing that prices will come down as a result of reports of large catches of sardines off the California coast in the past week.

Last season quotations opened up at $1.90 per unit of protein for meal and because of the short pack here, climbed to a high of $2.40 per unit the end of the season.

USDA Aims to Curb Turkey Optimism

Officials Urge Industry to Go Slow With '56 Expansion

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The turkey industry, inoculated with a profitable deal already in the bag this year and possibly infected with a contagion from the boiling stock market, appears headed for an expansion of production in 1956 which is, to put it mildly, disturbing to U.S. Department of Agriculture officials and also to the more stable industry elements who sense another whirl on the roller coaster.

As in past years in the instance of the turkey industry, USDA is taking time by the forelock and this week brought in its Turkey Industry Advisory Committee to talk things over. Two years ago the turkey IAC urged the industry to move slowly on production using as its basic argument findings of the American Feed Manufacturers Assn.'s College Survey Committee which clearly waved the red flag against any broad expansion of production.

In that year, heated by the heady wine of success, the industry ignored the college survey warnings in many respects and worked itself into a rather unsatisfactory price situation before the 1953 turkey was closed out.

In late 1954, USDA again swung its turkey IAC into action and through combined efforts of all phases of the industry, production was held in check with the result that as the 1955 marketing year closes it is reported cash registers are ringing

(Continued on page 77)

Lake Shipments of Grain to Buffalo At Early Standstill

BUFFALO—The lakes grain trade in Buffalo has nearly collapsed, according to a Corn Exchange report. No grain at all arrived here by lake freighter in the week ended Nov. 14. This is in sharp contrast to many previous years when the late fall was one of the busiest seasons for the lakes grain trade in Buffalo.

Grain men explained that the elevators are too full to take much more grain. In addition, the Commodity Credit Corp. has been making no moves lakely to ship its grain from the head of the lakes to Buffalo.

"Grain elevator space is a real problem here," one grain merchandiser said, adding that commercial elevators on the waterfront currently are holding nearly 28,750,000 bu., close to their rated capacity.

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A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
3301 WAYZATA BLVD., MINNEAPOLIS, MINN.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)
(Telephone: Main 6575. All Offices Serviced by Bell System Teletype)

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Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 1, Minn. Single copies 20¢. Subscription rates: One year $4, two years $7, in the U.S., U.S. possessions, Canada and Pan-America. Add $1 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-8. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The controlled circulation of this issue is concentrated in the southeastern states

Formula Feed Standards?

AN interesting suggestion—and one that certainly would be highly controversial if it were seriously proposed—was contained in the closing paragraphs of the talk given by Dr. Gerald F. Combs at the recent annual meeting of the Association of American Feed Control Officials.

Dr. Combs, who is professor of nutrition at the University of Maryland, has done considerable work of major value in poultry nutrition research. He has been in demand as a speaker at several of the 1955 nutrition conferences and has, in fact, included his suggestion in other talks than that delivered to the feed control officials.

Here are his remarks, and the table to which they refer:

"Now I have something which is a bit unusual and which should be of interest to this group. Following the 1955 Maryland Junior Broiler Production Project, 100 lb. each of several of the commercial feeds most commonly used in this project were obtained by the Poultry Department through the cooperation with the Maryland Inspection and Regulatory Service. Of these, 18 were broiler starting feeds. Analyses for crude protein, crude fat, and crude fiber were conducted by Maryland Inspection and Regulatory Service. Each of these feeds was fed to 20 male Vantress Red crossbred chicks (two trials) during a four week battery test. The combined results of these trials

Practical Starting Rations Used in 1955 Maryland Junior Broiler Production Project, Poultry Department, University of Maryland

Av. 4-wk. wt., gms.	F/G	Prod. Eff.	% Protein Analysis Guar.	% Protein Analysis	Dif.	% Fat Analysis Guar.	% Fat Analysis	Dif.	% Crude Fiber Analysis Guar.	% Crude Fiber Analysis	Dif.
472	1.76	270	22	23.9	+1.9	3.0	3.5	+1.5	5.5	5.4	—0.9
463	1.81	247	22	24.0	+2.0	3.5	4.5	+1.0	4.5	3.7	—0.8
492	1.90	259	22	24.0	+1.6	5.0	5.5	+0.5	3.0	3.3	+0.3
481	1.92	251	22	23.8	+1.8	3.0	5.2	+2.2	5.0	3.9	—1.1
471	2.00	240	20	20.8	+0.8	3.0	3.4	+0.4	5.0	3.8	—1.2
493	2.06	240	21	21.6	+0.5	3.5	4.1	+0.6	4.0	3.6	—0.4
471	1.97	239	22	22.9	+0.9	4.0	4.3	+0.3	5.0	3.8	—1.2
470	2.02	233	22	25.4	+1.4	4.0	4.3	+0.3	4.5	3.2	—1.3
462	1.97	229	22	24.2	+1.8	4.5	4.8	+0.3	4.75	3.9	—0.85
447	2.02	221	20	21.6	+1.6	5.0	5.3	+0.3	4.5	3.5	—1.0
449	2.03	219	21	23.9	+1.9	5.0	5.2	+0.2	5.0	2.9	—2.1
455	1.90	218	20	24.3	+4.3	3.5	2.7	—0.8	5.0	3.2	—1.8
476	2.36	213	21	24.7	+2.7	4.5	6.2	+1.7	5.0	3.5	—1.4
470	2.30	204	18	20.3	+2.3	3.0	4.3	+1.3	7.0	4.3	—2.7
443	2.19	203	20	21.3	+1.3	4.0	4.5	+0.5	5.5	4.8	—0.7
439	2.24	196	21	22.9	+1.9	3.0	4.4	+1.4	5.0	3.8	—0.2
288	2.58	150	20	23.2	+3.2	3.5	3.5	±0.0	6.0	5.0	—1.0
261	2.67	140	20	21.1	+1.1	3.8	4.8	+1.0	5.0	5.0	±0.0
456 Av.	2.09	217	21.3	23.0	+1.8	3.8	4.4	+0.6	4.8	3.8	—1.0
508	1.46	289	Maryland Experimental High Efficiency Ration								
466	2.00	206	A. N. R. C. Standard Reference Diet								

Average of two trials, involving 10 male Vantress Red crossbred chicks per ration. Analyses conducted by Maryland Inspection and Regulatory Service.

Prod. eff. = wt., gms. / feed/gain

are presented in the accompanying table. The feeds are ranked according to decreasing productive efficiency, which amounts to the average weight divided by the feed required per unit of gain during the four week period. The difference in performance of the various commercial broiler starting feeds is striking. It is indeed interesting to note that the Maryland Experimental High Efficiency Ration not only gave better feed efficiency but also supported approximately 15% better growth than was obtained with the best commercial formulas. There can be no queston but that many practical feeds can be greatly improved.

"When one looks at the guaranteed and actual analyses for protein, fat and fiber, it appears that there is no good correlation between the actual analysis and the level found. If one compares the actual crude fiber level with the productive efficiency of the feeds, there is the striking inverse relationship. On the other hand, if one compares the guaranteed analyses for crude fiber with the productive efficiency, the relationship is hardly apparent. This same lack of relationship with performance applies to the protein and fat guarantees. This merely illustrates the impossibility of estimating the relative value of feeds with only the information on the label.

"There is no doubt that feed manufacturers generally are conscientiously endeavoring to make the best possible feeds, but in some cases, at least, they can use additional information and help in formulation of rations. Obviously, this is a big challenge to college nutritionists. However, it would seem to me that the feed control official might be able to aid the college nutritionist in reaching more of these manufacturers who can use additional help. If the feed control official in cooperation with the college nutritionist could supply each company desirous of registering a feed with information concerning the most appropriate nutrient levels for use in feeds designated for various purposes, this would be of extreme value to the feed manufacturer. The feed control official might even request the manufacturer to submit the calculated approximate levels of various critical nutrients in each of his formulas. This would aid the control official and would encourage all feed manufacturers to consider the levels of all critical nutrients in the formulation of their rations. Such a procedure could aid materially in improving the quality of commercially mixed feeds."

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THIS is an interesting—a curious—suggestion. Its adoption would have so many ramifications that even a brief consideration of them becomes appalling. Dr. Combs does not actually propose that the development he mentions be made a part of feed control legislation or regulations, but the mere fact of its presentation in this manner, and at a meeting of the Association of American Feed Control Officials, would indicate that more than casual thought had been given the idea, probably by others as well as Dr. Combs.

The confusion that would follow any attempt to set up arbitrary nutrient levels for formula feeds by such means would be disastrous to the feed industry, and hardly less so for feeders.

What, or whose, standards would be employed? Nutritionists are not always in agreement. Furthermore, research is making nutritional discoveries all the time. Some recommendations could be out of date long before they were abandoned as "official."

How would uniformity between states be achieved? With all due respect to our feed control officials, it should be said that any feed manufacturer doing business in several states knows that, even now, divergent opinions of feed control officials on labeling and registration matters constitute a real problem. Few feed control officials are qualified nutritionists. Some are neither nutritionists nor chemists. To whom would they defer in making their recommendations?

There are many other obvious objections to having nutrient standards for formula feed set, either officially or unofficially, through feed control officials. Basically, the fallacy of the suggestion is that it gets away from the important and proper aim of feed control work, which is to ascertain that the label accurately and adequately describes the parcel or package of feed it is intended to cover. If the feed laws, or feed control officials, depart very far from that concept they are confusing the issue, and probably are diminishing the value of feed control services.

We emphasize the point that neither Dr. Combs nor the AAFCO seriously proposed the imposition of nutrient standards for formula feeds, or the enforcement of them. But the suggestion itself does call for discussion, and we are certain that few, or no, feed manufacturers could do anything but strenuously oppose such a development.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Feed demand for the most part continued lighter than usual for this time of the year, with the reduction in volume attributed to summer-like weather in some areas and in general to farmers' dissatisfaction with feeding returns. Cold weather in the Pacific Northwest failed to stimulate demand to any extent, and in the Northwest buying did not pick up as much as might have been expected following the arrival of cold weather and snow. Ingredient prices were steady to somewhat lower. The index of wholesale feedstuffs prices declined .7 point to 186.2 and the feed grain index dropped 3.6 points to 173.3. (Ingredient details on pages 78-81.)

Southwest

Sub-freezing temperatures over much of the Southwest for several days tended to improve the demand for feed this week. Any satisfactory improvement, however, was held back by continued easy prices for feed products and few gains of any importance for end products of livestock and poultry.

An ice and snow cover over Kansas, Nebraska and Iowa caused some feeders of hogs and cattle to take their livestock off the corn stubble and increase the use of feed supplements. Range cattle feed demand was somewhat improved. Cattle feed lot operators were in no mood to step up feeding of concentrates to their stock because recent cattle markets furnished no encouragement as to profits.

Hog feed demand was fair to moderately improved. Dairy cattle feed demand showed some slight increases. There was a fairly good demand for broiler feed, and commercial laying operations were creating a good market for feed from some mills. Egg feed sales were fair.

Prices were steady to $2 ton lower this week, the major declines coming in higher protein items. Operations generally were at five days this week, with some mills requiring an additional shift or two to keep up with shipments.

Northwest

Feed business was reported about steady this week in the Northwest, and some manufacturers felt that November business would probably hit about average levels despite a slow start for the month.

Cold weather has stimulated demand to some extent, and continuation of the cold spell is bound to encourage additional buying. Farmers remain reluctant to buy any more formula feed than they absolutely have to, and thus concentrates are getting the most attention.

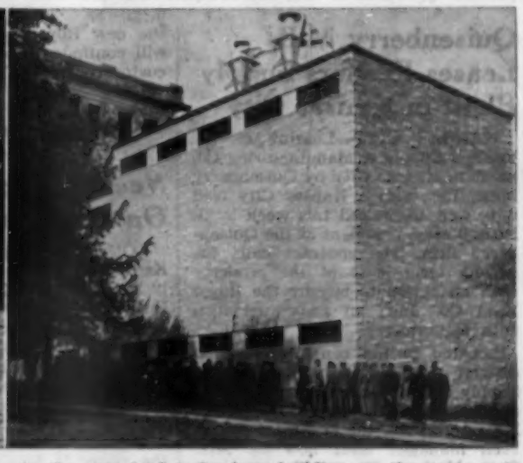
Sales of laying feeds improved, and more of an upswing is anticipated. Some renewal of broiler feeding in the area served by Northwest mills also is indicated.

Manufacturers who ship to range feeders believe that there is a good possibility of better demand this season than in some recent past years when weather was relatively open throughout the winter.

(Continued on page 82)

Some 350 of the feed men who attended the dedication Nov. 10 of the new feed technology facilities at Kansas State College, traveled from Kansas City to Manhattan on a special Union Pacific train. In the first picture, R. E. Wendland, Wendland Grain Co., Temple, Texas, chairman of the scholarship committee for the feed school, talks over the industry's scholarship program with a group aboard the "Feed Tech" special train. In the second picture are two other passengers—David H. McVey (left) and Howard B. Herron, General Mills, Inc., Minneapolis. Kansas City Feed Club members were hosts aboard the train, and in the third photo two of the passengers are being welcomed by club officials. Left to right are Klaas Stolp of Dusseldorf, Germany, who is in this country learning U.S. feed manufacturing methods; W. E. Diamond, American Feed Manufacturers Assn., Chicago; Robert Hollister, Cereal By-Products Co., president of the Kansas City Feed Club, and Joe Cooper, Staley Milling Co., who was in charge of the train arrangements.

Camera Views of the Feed Technology School Dedication



At Manhattan, the Manhattan High School band provided a musical welcome for the 12-car streamliner. Upon arrival, as shown in the second photo, the feed men went to the new feed technology building on the campus to inspect the pilot feed mill. (A story on the dedication appeared in the Nov. 12 issue of Feedstuffs.)

Benjamin Fairless of the United States Steel Corp. was principal speaker at the dedication ceremonies, and his private car was part of the special train. As shown in the first picture above, he was greeted at Manhattan by Dr. James A. McCain (left), president of Kansas State College. In the second picture, B. D. Eddie (right), Superior Feed Mills, Oklahoma City, chairman of the Feed Technology Advisory Committee, officially presents to the college the new feed tech facilities, which were contributed by the industry. Dr. McCain is accepting a scroll documenting the occasion. In the third photo are the three men who gave responses to Mr. Fairless' dedicatory address. Left to right are Maurice Johnson, Staley Milling Co., Kansas City, who spoke for industry; George Andrews, president of the Kansas Livestock Assn., who spoke for agriculture, and Dr. Arthur D. Weber, dean of agriculture at K-State, who spoke for education. The theme of the dedication was "Industry, Agriculture and Education—A Three-Way Relationship."

Before returning to Kansas City after the dedication, the train proceeded to Abilene, Kansas, where the feed men visited the Eisenhower Museum and were welcomed at the station by the Abilene Cowboy Band.

During a luncheon at the college, Mr. Fairless was presented with a hat by the Kansas Livestock Assn. Making the presentation is Mr. Andrews (left), and shown applauding is Mr. Johnson (right). As shown in the second picture, among those aboard the train were George Lines, Dannen Mills, St. Joseph, Mo., and Ricky Shoop, son of Richard Shoop of Albers Milling Co., Kansas City. Ricky was playing the part of a high school senior considering the possibility of studying feed technology at Kansas State, and Mr. Lines played the part of his father. Their visits to the previous Midwest Feed Production School in Kansas City and to the dedication at the college were filmed by WIBW-TV, Topeka, and a documentary film of the events will be made available later to the industry.

MILL LEASED—Feed manufacturing and distributing facilities have been leased by Quisenberry Mills, Inc., of Kansas City, from the Feeders Supply & Manufacturing Co., also of Kansas City. Negotiations were completed Nov. 12 and the firm will now be operated as the Royal Feeders Supply Co. Shown above, from front to rear, are the general offices, warehouse and dock and the feed manufacturing plant. These facilities will supplement Quisenberry's present operations at 85th and Prospect in Kansas City.

Quisenberry Mills Leases Feeders Supply Plant in Kansas City

KANSAS CITY—Leasing of the Feeders Supply & Manufacturing Co. plant in Kansas City by Quisenberry Mills, Inc., also a Kansas City feed mill, was anncunced this week by J. Russell May, president of the Quisenberry firm. The contract calls for a long term lease of the property with an option to buy by the Royal Feed Co., Inc., an associated firm with Quisenberry.

Located in the central industrial district of Kansas City, the Feeders Supply company has been in business for 50 years. Founded by the late Robert Nathan, the organization has been managed until now by Mrs. Ruth Nathan Fitzgerald, president and Joseph E. Fitzgerald, vice president.

Mr. May explained that the expansion of Quisenberry operations to include Feeders Supply was prompted by a growing demand for cattle feeds in the midwestern area and that Quisenberry's plant at 85th and Prospect in Kansas City will continue to be operated primarily for the manufacture of a general line of formula feeds including some types of cattle feeds. With the two plants the firms can easily serve both dealer organizations with an interchange of production facilities, he added.

The newly-acquired property will be operated as the Royal Feeders Supply Co. and will manufacture and sell a complete line of Royal feeds. The company also will continue to produce and sell Royal Equity brand cattle feed products and high molasses items such as Kra-Ker-Jax.

The Feeders Supply facilities cover a block's area and include general offices, a 150-ton feed mill and warehousing space. Total floor area is approximately 53,000 sq. ft.

Officers of the Quisenberry and Royal corporations, in addition to Mr. May, include Raymond Rust, vice president, and N. M. Meunier, secretary-treasurer. Mr. Rust will continue to direct the Quisenberry sales and will serve in a managerial capacity for the new business. Employees of the old Feeders Supply organization have been urged to remain with the new management.

Mrs. Fitzgerald pointed out that the new Royal Feeders Supply Co. will continue to serve Equity brand customers. The Fitzgeralds plan to move to Weatherford, Texas, where they operate a cattle feeding project and manage oil and gas interests.

New Kentucky Ruling On Fire Risk Rates

LOUISVILLE—A new ruling of the Kentucky Inspection Bureau, formerly known as the Kentucky Actuarial Bureau, a rate making organization of fire insurance companies, enlarges the multiple location rating plan to include cereal mills, flour mills and malting plants. This, the bureau advises, will also cover warehouses of large feed companies, some of which have warehouses in several cities of the state. It does not include grain bin elevators, tanks and other structures communicating with mills. Companies operating feed distributing warehouses in several cities will enjoy lower rates under multiple location forms.

Multiple location forms were first approved for chain store organizations, such as groceries and drug stores.

New Book Issued On Rabbit Production

FONTANA, CAL.—Increasing popularity of domestic rabbit meat with the public is being recognized with the publication of a new book, "Domestic Rabbit Production."

It has been estimated that 50 to 60 million pounds of meat from the domestic rabbit is being produced annually. More and more producers are being attracted by rabbit raising and the book presents material which ranges from breeding to preparation for the table.

George S. Templeton, director of the U.S. Rabbit Experiment Station, Fontana, Cal., is author of the book. Its 210 pages and 28 illustrations are devoted to such topics as selecting and purchasing stock, rabbitry and equipment, feeds and feeding, breeding, management, meat production, rabbit shows, marketing, rabbit ailments, slaughtering, wool production and domestic rabbit meat and its preparation for the table. Publisher is the Interstate, Danville, Ill.

Production of Millfeed Increases

Production of millfeed in tons for week ending Nov. 11, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour extraction.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Nov. 4-11	26,107	493,112	12,846	266,101	11,451	152,106	51,403	911,318
Prev. week	‡26,287		‡14,371		10,449		‡50,107	
Two wks. ago	26,704		15,443		10,907		53,114	
1954	24,966	481,781	14,172	261,067	12,100	204,694	51,238	847,542
1953	25,406	471,886	16,288	282,685	11,403	198,624	52,097	953,195
1952	26,122	496,096	16,176	300,786	19,910	304,345	62,197	1,103,226
1951	25,707	503,200	15,422	184,121	9,905	196,594	51,034	882,915

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

"Mr. Cage" Predicts —

Cage Laying Will Increase in Minnesota, Poultry Group Told

By THOMAS E. LETCH
Feedstuffs Editorial Staff

MINNEAPOLIS—Members of Minnesota's poultry industry were told that they can and will utilize cage laying as a means to greater profit during the 28th annual meeting and convention of the Minnesota Poultry Hatchery Assn. held Nov. 15-17 in the Hotel Radisson.

Telling them that was Prof. D. F. King, head of the poultry husbandry department at Alabama Polytechnic Institute, Auburn, Ala., who is frequently called "Mr. Cage."

Prof. King's appearance at the Minnesota convention calls attention to the increasing interest in cage laying operations—even in northern climates where until recently the system was considered impractical.

Prof. King was the main speaker in a first-day session on "Cage Laying—Practical or Fantasy," one of the highlights of the convention. Appearing with him on a panel were David Martin, head of all broiler feed operations, feed and soybean division of Pillsbury Mills, Inc., Minneapolis; Hugh R. Ferguson of the A. R. Woods Manufacturing Co., Luverne, Minn., and L. A. Pockman of the L. A. Pockman Manufacturing Co., a division of Montgomery & Crawford Co., Inc., Decatur, Ala. Dr. Elton Johnson, professor and head of the poultry husbandry department of the Institute of Agriculture, University of Minnesota, moderated the panel. Colored pictures of cage operations in the state were projected on a screen by Mr. Ferguson. Several cage laying operators in the state also answered questions.

"Cage laying is a modern program that is just right," said Mr. King—"profitable, but not so overwhelmingly profitable that egg producers cannot afford to use any other system."

By cage laying, Mr. King said that he meant the single-deck cage which is far different from the old three-deck system of 30 years ago that featured bad ventilation, unsanitary conditions and high cleaning cost. The modern method, he pointed out, developed first in California many years ago, then became popular in the South and is now spreading northward.

Responsibility on Management

He likened the cage laying method to a factory system and said that because of that fact, a lot of responsibility is put on management.

"It takes a good man to run cages," he stated emphatically, pointing out that a caged chicken cannot move from a cool or hot place to where it is more comfortable, that it cannot hunt for its own food or find its own water.

Some average production and profit comparisons between cage laying and floor systems were cited by Prof. King as follows:

EGG PRODUCTION—In California annual egg production in tests showed 207 eggs for hens on the floor and 241 in cages; Texas tests showed 217 for floor and 242 for cages, and in Alabama the averages showed 196 for floor and 225 for cages. With only one exception—in a Louisiana test where the producer reported noncompliance with standard procedure—cage layers have outproduced floor layers in tests. Cage laying flocks average between 70-75% production per year, Prof. King said.

FEED UTILIZATION — One test has shown production of 208 eggs per bag for floor layers compared with 229 eggs for cage layers. One California producer reported production of a dozen eggs on 4 lb. feed.

PROFIT PICTURE — In Alabama labor, feed, etc., costs per dozen eggs for floor layers were 43.8¢. These eggs were sold for 53.2¢ doz., leaving a profit of 9.4¢ doz. Costs of producing a dozen eggs in a cage system were 37.2¢. These eggs were sold for 56.8¢ doz., leaving a profit of 19.6¢ doz.

MORTALITY—In the floor systems, 15-20% mortality is average while in cage laying the mortality rate runs about 5%. This is so, Prof. King said, because there is less danger of contamination in the cage system and there is a better culling program that permits the producer to sell off birds as soon as they fail to produce.

Records of Prime Importance

"The number one advantage to a cage laying operation is the records that should be kept," he said. A farmer who keeps accurate count of each hen's production knows which hens are making money for him and which should be culled, he explained. Several other advantages of the system were cited by Prof. King.

He said that under the system recommended at Alabama of replacing hens every 10 weeks, the farmer gets more for his culls. In a floor system when a farmer culls 200 to 300 chickens, he is lucky if he can get 50¢ apiece for the birds because of the large number sold all at once.

But, he said, when a farmer culls a smaller number of chickens every 10 weeks he can develop a market for the more tender hens and get about $1 each for the culls.

Another advantage, Mr. King said,

(Continued on page 81)

Beef Cattle Nutrition Film Now Available

DES MOINES, IOWA—"The open door to greater beef profits," a beef cattle nutrition film produced by Iowa State College, under the sponsorship of Feed Institute, Inc., is now available to the feed trade.

A few prints have been delivered to feed manufacturing companies on advance purchase orders. By Dec. 1, additional prints will be ready for purchase and also upon a rental basis for showings at feeder meetings, sales and dealer conferences, and to farm groups.

Prints of the 16 mm. sound and color film can be obtained from the Film Library at Iowa State College, Ames, for the exclusive use by vocational agriculture instructors and county extension directors, within Iowa, and for educational purposes at agricultural colleges, at nominal rental fees and shipping costs.

The beef cattle nutrition film is the third in a series of animal nutrition films sponsored by Feed Institute and produced by Iowa State College. "The Open Door to Greater Hog Profits," and "The Open Door to Greater Egg Profits," have been widely used throughout the U.S. Both films have been shown in European countries. Two egg films were obtained by the University of Puerto Rico, one by the Egg Marketing Board of the state of New South Wales, Sydney, Australia.

The 20-minute beef film, which is reported to tell in concise form that new discoveries and new additives in cattle feeds open the door to greater beef profits, will be shown at 9 a.m. Nov. 22 during the convention of the Western Grain & Feed Assn. at Hotel Fort Des Moines.

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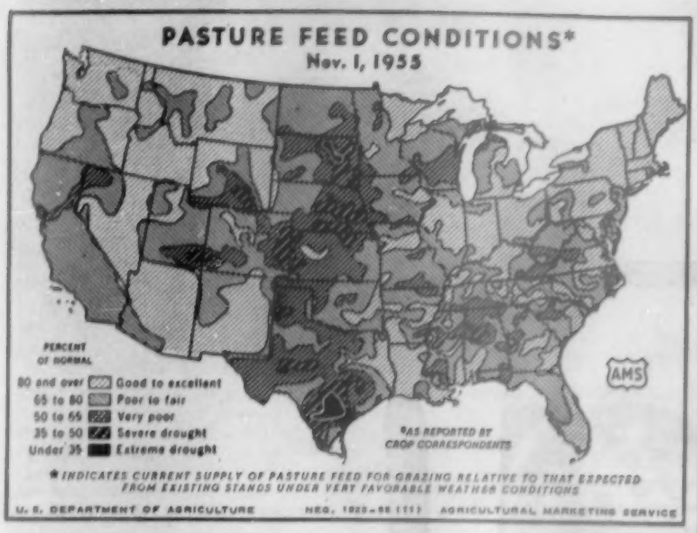
PASTURE FEED CONDITIONS*
Nov. 1, 1955
PERCENT OF NORMAL
80 and over Good to excellent
65 to 80 Poor to fair
50 to 65 Very poor
35 to 50 Severe drought
Under 35 Extreme drought
AMS
*AS REPORTED BY CROP CORRESPONDENTS
* INDICATES CURRENT SUPPLY OF PASTURE FEED FOR GRAZING RELATIVE TO THAT EXPECTED FROM EXISTING STANDS UNDER VERY FAVORABLE WEATHER CONDITIONS
U. S. DEPARTMENT OF AGRICULTURE
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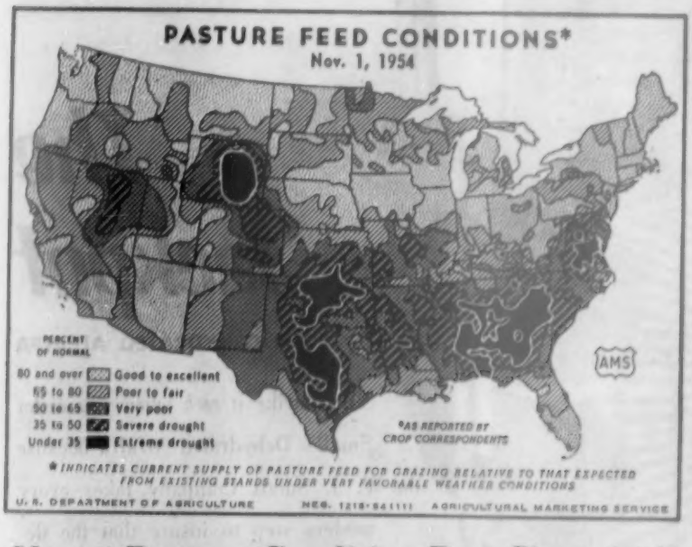
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U. S. DEPARTMENT OF AGRICULTURE
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Nov. 1 Pasture Condition Best Since 1951

WASHINGTON — During October farm pastures showed considerable improvement, and on Nov. 1 were the best for the date since 1951, but only about equal to the 1944-53 average.

The U.S. Department of Agriculture's November crop report shows that pastures for the whole country averaged 73% of normal, compared with 69% on Nov. 1, 1954. (See accompanying maps.)

Timely rains helped pastures in the northeastern and north central parts of the country. On the other hand, pastures were spotty and about average in most of the Southeast, although much improved from last year over the entire South. Pastures in the West were generally near average but considerably better than a year ago in Wyoming, Colorado and New Mexico.

Mild weather in northern and western areas has allowed full utilization of late season pasture growth encouraged by increased moisture over much of the U.S. in the last two months.

The 1955 pasture season as a whole was moderately better than in the previous two years, the USDA says, but considerably below average, as prolonged dry weather in some central sections of the country resulted in some severe shortages of feed. Condition for the April 1-Nov. 1 period averaged 75% of normal compared with 71% in 1953 and 1954.

Livestock in several states of the western Corn Belt — east central Great Plains area—had a very poor grazing season. In contrast, over much of the southeastern part of the country, pasture feed was perhaps the best in the last few years, USDA says.

We're Moving

Beginning November 21, 1955, Arcady's general offices will be in Riverdale, Illinois. Our mailing address will be:

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Arkansas Feed Tonnage Higher

LITTLE ROCK, ARK.—The total feed tonnage reported for 1954-55 in Arkansas is 2.6% above that of 1953-54, according to the Arkansas State Plant Board, Little Rock. Tonnage for the latest year was 921,057, compared with 898,013 tons during the 1953-54 period.

Sizeable gains were reported in tonnage of dairy cattle and calf feeds; horse and mule and all grain feeds, cottonseed meal and oat products for 1954-55 as compared with the previous year.

A corresponding decrease for pig and hog feed and soybean oil meal is noted for the same period. Poultry feeds, which showed a reduction in tonnage the first and second quarters, regained the losses in the next two quarters due to improved market and weather conditions. The report states that the depressed hog market undoubtedly played an important part in the tonnage sold as pig and hog feeds.

The following table shows the comparison of fed tonnage reported in Arkansas for the fiscal years ending June 30, 1954 and 1955, respectively.

Type of feed	1954-55 Tons	1954-55 % of total	1953-54 Tons	1953-54 % of total
Poultry	469,693	51.0	468,886	51.1
Dairy, cattle and calf	160,916	17.5	148,289	16.5
Pig and hog	30,370	3.3	36,262	4.1
Horse, mule & all grain	42,281	4.6	35,650	4.0
Dog & small animal	8,661	.9	9,390	1.0
Cottonseed meal	59,148	6.4	51,662	5.7
Soybean oil meal	7,849	.9	13,396	1.5
Wheat products	54,396	5.9	52,674	5.9
Corn products	41,888	4.5	38,842	4.3
Rice products	11,767	1.3	10,566	1.3
Oat products	11,136	1.2	6,684	.7
Miscellaneous	32,958	3.6	35,873	4.0
Total	921,057	100.0	898,013	100.0

Kansas City Feed Club Plans Yule Party

KANSAS CITY—The annual Kansas City Feed Club Christmas party will be held Dec. 10 at the Town House Hotel in Kansas City, Kansas, Robert Hollister, Cereal By-Products Co., club president, announced this week. Cocktails will be served at 7 p.m., dinner at 8 and dancing to the music of Earl Coleman and his orchestra will follow.

The party will be held in the ballroom of the Town House. While reservations will be rather limited and should be placed immediately, it was pointed out that a larger number of accommodations can be handled than in recent years.

Checks in the amount of $13.50 per couple should be sent to James Lynch, Uhlmann Grain Co., 1158 Board of Trade Bldg., Kansas City, Mo.

Herman Nagel

Herman Nagel, Nagel Firm Founder, Dies

CHICAGO—Herman Nagel, founder of the Herman Nagel Co., Chicago manufacturers of mineral feed concentrates, died in Michigan City, Indiana, Nov. 14, from a sudden attack of cerbral hemmorhage.

Mr. Nagel was born in Denmark, December 25, 1889, son of a physician. He came to the U.S. at the age of 16.

After working as a hired hand on a South Dakota farm, he attended South Dakota State College and obtained his bachelor's degree. This he followed with post-graduate work in the field of nutrition at the University of Wisconsin, the Royal Agricultural College, Berlin, Germany, and Columbia University, New York.

With the Douglas Co. (now Pennick & Ford) at Cedar Rapids, Iowa, Mr. Nagel worked on new products promotion, corn gluten feed and corn oil. With the American Sugar Refining Co., New York, he pioneered molasses feeding in northern states as early as 1919. For the Cudahy Packing Co., Chicago, in 1924, he introduced a mineral feed department. Later as a member of the staff of the National Cottonseed Products Corp., Memphis, he was responsible for the formula feed department. For the Iodine Educational Bureau, New York, he promoted the use of iodine in feeds. With the Marblehead Lime Co., Chicago, he pioneered a mineral feed department.

In January, 1941, Mr. Nagel founded the Herman Nagel Company and introduced a line of mineral concentrates.

Mr. Nagel is survived by his two sons, Karl Herman Nagel and William L. Nagel, who will carry on the business together with F. L. Norton, an associate since the founding of the business in January, 1941. Karl Herman Nagel will be in charge of the northeastern and midwestern divisions and William L. Nagel will be in charge of the western division. Both have been associated with Mr. Herman Nagel in the business and both have had technical training in animal nutrition.

Missouri Returns Money to USDA

JEFFERSON CITY, MO.—A check for $120,762.69 was sent to the U.S. Department of Agriculture last week by Gov. Phil M. Donnelly of Missouri. The money was left over from the $500,131 made available to Missouri to help pay the freight on hay shipped in for the drouth-stricken livestock farmers under the 1953-54 program.

Return of the money apparently closes the books on the two hay programs which used a total of nearly $11 million during 1953 and 1954. Missouri provided all but about $1½ million of the total.

300 Hear Review of Nutrition Findings at Ohio Conference

By HENRY S. FRENCH
Feedstuffs Editorial Staff

COLUMBUS — The latest developments on several facets of the feed industry, including the newest additives and rations for most livestock, were presented to around 300 feed men attending the Ohio Animal Nutrition Conference. The meeting was a one-day affair, held in Plumb Hall on the Ohio State University campus, Columbus, Nov. 11.

A welcome to the campus was given by Dr. W. E. Krauss, of the Ohio Agricultural Experiment Station, Wooster, Ohio. The moderator of the morning session was L. A. Kauffman, of Ohio State University. Making the program arrangements was W. J. Tyznik, of the Department of Animal Science of OSU.

During the evening preceding the conference a board of directors meeting of the Ohio Grain & Feed Dealers Assn. was held at the Fort Hayes Hotel in Columbus. Presided over by Robert W. Rudy, S. J. Rudy & Sons, Covington, Ohio, the dinner meeting was held to finalize plans for the organization's next meeting, scheduled for the Commodore Perry Hotel in Toledo, Feb. 19-21, 1956. The group sponsors the Ohio Nutrition conferences jointly with the Ohio Agricultural Extension Service and the Ohio Agricultural Experiment Station.

Lead-off speaker was W. E. Huge, Central Soya Co., Inc., Ft. Wayne, Ind., who recounted the history and changes of soybean processing. From the early beginnings of the use of soybean oil meal in animal feeding around 30 years ago, Mr. Huge told how improved processing methods have developed to increase the utility of meal in high efficiency rations.

"Crazy Chick" Disease

Nutritional encephalomalacia, or "crazy chick" disease was discussed by Dr. Raymond H. Bunnell, Hoffmann-LaRoche, Inc., Nutley, N. J. Although the disease is not of primary economic importance, he said, its occasional occurrence in the field has naturally been of concern to the feed manufacturer. Since the disease is principally one of nutritional origin, the responsibility for its prevention lies more heavily on the shoulders of the feed formulator. He must give careful attention to the content of unsaturated fats, vitamin E and antioxidants, and the freshness of the feed ingredients in order to insure a diet which will keep the chances for encephalomalacia at a minimum. The fact that there is still an occasional case of encephalomalacia in the field points to the realization that we still are not in complete understanding as to all the factors involved, Dr. Bunnell said.

The present status of knowledge of field encephalomalacia was summarized recently as follows:

1. Basic Cause—unsaturated fatty acids.
2. Normal Control—biological antioxidant (vitamin E).
3. Optional Control — antioxidants other than vitamin E.
4. Modifying Factors:
   - A. Vitamin E carry-over.
   - B. B-complex vitamin(s).
   - C. Physiological stress.
     1. Rate of growth.
     2. Disease present.

In conclusion, Dr. Bunnell listed several metabolic stresses which call for increased Vitamin E. They are: Unsaturated fatty acids, low protein or even more severe low protein high fat diets, deficiencies of pyridoxine, deficiencies of potassium, deficiencies of choline and presence of pro-oxidants.

Rumen Factors

Dr. Orville G. Bentley, of the Ohio staff, during his remarks on new rumen factors, concluded that there is little doubt that the rumen microflora has specific requirements for unidentified nutritional factors which occur in various feedstuffs. Certain five and six carbon volatile fatty acids (e.g. valeric) and certain B-vitamins are related to or are a part of the unknown factor complex required by rumen microorganisms as determined in vitro. The rumen factor complex has not been fully identified chemically.

He stated further that no definite conclusion can be reached as to the efficacy of the rumen factors described as supplements to practical type rations for fattening steers. In the Ohio experiments there was a consistent trend toward faster rates of gain. However, the differences were not significant when analyzed statistically. Steer feeding experiments at the Iowa Station gave similar results.

He said that more work is needed on the problem of rumen factors as to their function in the rumen and on their role in digestion as carried out by the rumen microflora. Likewise more feeding experiments are needed with the rumen factor complex in cattle and sheep supplements before specific recommendations can be made. However, he said, it would seem that steer or lamb supplements to be used with low-grade roughages should contain ingredients rich in the rumen factor content, such as alfalfa leaf meal, molasses, soybean oil meal, etc. In urea-containing supplements, balancing the ration with respect to rumen factors should not be overlooked since urea is a pure synthetic compound haveing no factor activity itself.

Stilbestrol Review

Dr. Wise Burroughs, Iowa State College, Ames, Iowa, brought the audience up to date on experiments conducted at various colleges on stilbestrol cattle feeding. Cattle liveweight gains were stimulated consistently by stilbestrol feeding in 18 or 19 experiments reported, he said. The only exception was in a Kansas experiment with steer calves fed a high-roughage ration. Stimulations have been noted as high as 37% in an individual lot of steers receiving a high-grain ration. The average stilbestrol stimulation in gains, however, on the many types of rations and kinds of cattle fed was 16%. A level of 10 milligrams of stilbestrol or less per animal daily was fed in the experiments reported. Greater gain stimulation was noted on the high grain rations as compared to lesser stimulation on the high roughage rations. Steers responded a little more than heifers on comparable rations and there was a tendency for more gain response on heavyweight cattle as compared with lightweight calves, he said.

Dr. Burroughs reported further that feed costs are reduced by stilbestrol feeding, that the dressing percentage and carcass grades are similar to control lots, and that there are no detectable residues in stilbestrol-produced beef.

The effect of diethylstilbestrol on carcass characteristics was discussed by Dr. V. R. Cahill of Ohio State. He told of the effect of both oral and subcutaneous methods of administering the hormone. He emphasized that the subcutaneous implantation of stilbestrol in cattle has not been approved, and mentioned that at present the attitude of buyers seems to be that little or no discrimination against the hormone treated cattle is justified.

Energy Levels

Dr. James Waddell, Grasselli Chemicals Dept., E. I. du Pont de Nemours & Co., Wilmington, Del., pointed out that research during recent years has shown that by increasing the level of energy in our animal diets, especially poultry diets, marked improvement in rate of growth and in efficiency of feed utilization could be brought about. The availability of animal fats and dehulled soybean meal has made it easier to obtain higher energy levels, he said. However, it has also been demonstrated that energy can not be increased very much without also increasing the other nutrients in the diet, particularly the protein portion.

He reported that in work carried out in the du Pont Swine Laboratory, a quantitative linear relationship has been established between energy content of broiler diets and the requirements for the amino acid, methionine. These results show that in the average commercial diet, based essentially on corn and soybean meal, the first limiting amino acid is methionine and they provide a much more satisfactory method of determining the amount of methionine supplementa-

(Continued on page 88)

CHICAGO CORN RECEIPTS AT RECORD LEVEL

CHICAGO — A seven-year record for carlot receipts of corn on the Chicago Board of Trade was set Nov. 14, according to Robert C. Liebenow, executive secretary, with arrivals of 842 cars of that cereal. Translated into bushels, this would be about 1,515,000 bu. In addition to the rail run, there were 751 trucks with a total of 355,000 bu. and three barges carrying 125,000 bu. Total corn receipts for the day amounted to 2,055,000 bushels.

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FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
STAR BRAND PULVERIZED MIXED FEED OATS
CORN OATS PELLETS (Corn-Oats)
ENERGEE PULVERIZED OATS
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
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UNCLE TOM'S FEED FABLES

"The older I get, the more I wonder what is success. Is it measured by dollars, position, fame or just what is it?" a friend of mine said.

"I got married on a salary of $75 a month and I thought if I could just make $100 I would be O.K. Eventually, I did, but always the more I made the more I spent.

"Position? I was happy at first as clerk in the office, but pretty soon I wanted the job as chief clerk. I soon wanted the district sales manager's job and then the sales manager's title. I got them both, but was still dissatisfied and always will be.

"Fame? Well, take the case of my friend, Jim. He just wanted to be a good lawyer when he got out of college and start a practice in our town. Then the political bug bit him and he ran for representative and was elected. After his first term he told me that if he could get to be a state senator he would be satisfied. He made that too, but now the crowds had him. He told me once, "If I can be elected to attorney-general, I'll return after the first term and settle down to business," but he didn't. Now he is governor of our state, and I know he has his eyes on the U.S. senatorship. All his life he will be reaching up, and I often wonder, 'What for.'

"On the other hand, take a look at Ralph over there. I always thought he had missed the boat until these last few years. He had all sorts of ability and could have gone a long ways. When he turned in his resignation, they tried to get him to stay, offered him more money and promised him the sales manager's job, but he wasn't interested. Instead he went head over heels in debt for a bankrupt elevator up in the northern part of the state. That was about 15 years ago, and he has done all right. He belongs to the country club, plays golf two or three times a week, and has been close to his wife and to his kids while they were growing up. The two boys are taking over this month while he and his wife take off on a three months' tour around the world.

"Ralph and I started out in the same office together and I could probably buy and sell him a dozen times and never feel it. Outside of his own county I don't suppose there are more than a dozen people, other than those in the feed business, who know who he is, but just look at him. We are about the same age, but he looks 20 years younger. He'll shoot that course in the lower 80's any day and doesn't seem to have a care in the world.

"Now let me ask you, 'Who would you say was the most successful, Jim, me or Ralph?' "

Spencer Kellogg Earnings Decline

BUFFALO — Spencer Kellogg & Sons, Inc., reported its net income, after taxes, in the fiscal year ended Aug. 27 totaled $326,149, equal to 27¢ a share. This compared with $2,628,739, or $2.15 a share, in the preceding fiscal year.

Sales in the latest 12 months declined to $90,345,041 from $105,739,266 a year earlier.

Howard Kellogg, Jr., president of the company, said the latest period was characterized by inadequate margins between buying and selling prices and by an "anomalous situation in soybeans."

"There was a large quantity of beans produced, but only a relatively small volume of them came to market at the times when they traditionally appear," he a added, and "this market starvation in the midst of plenty made it difficult to operate plants steadily, as must be done if efficiency is to be attained."

Mr. Kellogg said, "the potential surplus of soybeans which actually never made its appearance until the end of the crop season nevertheless acted as a price depressant on the products of our industry. Buyers of soybean oil meal were at no time aggressively bidding for these products. Thus, after an early initial run-up, prices declined for the remainder of the season." Mr. Kellogg added, "the processor was squeezed as to profit margins by farmers who held back on their soybeans, creating an artificially high price, and by the buyer who was looking at potential surpluses and depressing the price of end products."

He said dollar sales were 14.6% lower than they were in 1954, as a result in part of lower price levels for both raw materials and products.

B. C. Christopher, Jr., Grain Merchant, Dies

KANSAS CITY—The death of Benjamin C. Christopher, Jr., 74, senior partner of B. C. Christopher & Co., Kansas City grain commission firm, occurred here Nov. 16.

Mr. Christopher entered the grain business in 1906 and became a partner of the Christopher firm in 1922. He had been a member of the Kansas City Board of Trade for 50 years.

Surviving is his widow, Mrs. Nelle Christopher of the home, Fairway, Kansas; two daughters and two brothers, including James K. Christopher, Kansas City, active member of the commission company.

N. W. Feed Group Plans Dinner Dance

MINNEAPOLIS — The Northwest Feed Manufacturers Assn. will hold its annual dinner dance Dec. 2 at the Calhoun Beach Hotel in Minneapolis.

A cocktail hour will begin at 6:30 p.m., and dinner will be served at 7:30. There will be music during the cocktail hour, a floor show and an orchestra for dancing.

Reservations are being made with Dick Blomfield, Blomfield - Swanson, 6009 Wayzata Blvd., Minneapolis 16. Admission is $10 a couple.

FEED MILL PLANS

BADGER, IOWA — The Badger (Iowa) Co-op Elevator Co. has made tentative plans for a new feed mill.

Protein Oil Meal Futures Trading Dull

MEMPHIS—Trading in protein oil meal futures at the Memphis Board of Trade last week was dull and featureless. Volume was fair.

The soybean oil meal market recouped some of its earlier losses late in the week, gains being based on a smaller than anticipated soybean estimate.

Lower soybean oil meal futures came, in part, from weakness in nearby cash oil meal, dealers said. The crush of beans has been unusually heavy. There was said to be scattered speculative liquidation.

In the more distant months, brokers who usually act for cash oil meal interest were good buyers, which dealers credited to backspreading operations. Professional selling supplied most of the contracts in these options with a small amount of commission house interest on the advances.

Unrestricted soybean oil meal closings for the week were unchanged to 50¢ ton lower. Eastern Trunk Line soybean oil meal losses ranged from 10@75¢ ton.

Losses in cottonseed oil meal futures were somewhat larger than in other oil meals, extending to $1.50 ton in the December position. Cottonseed oil meal, too, posted gains late in the week, only to finish on a downward note.

13 Michigan Counties Designated Loan Area

WASHINGTON—The U.S. Department of Agriculture has announced the designation of 13 counties in Michigan as an area where the Farmers Home Administration may make emergency loans to farmers whose crops and pastures were damaged by drouth conditions in 1955. Farmers may apply for the loans through June 30, 1956.

Counties included in the designation are: Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Emmet, Kalkaska, Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon.

Drouth conditions during the summer of 1955, accompanied by abnormally high temperatures, caused excessive damage to the area's crops and pastures and seriously impaired the condition of livestock. Emergency loans are made to finance continued normal operations. To be eligible, a farmer must be unable to obtain the credit he needs from other local sources.

USDA also extended the designation of 38 counties in North Carolina as an area where FHA may make emergency loans to farmers whose crops and property were damaged by hurricanes and, in some areas, continued drouth. The former designation through Dec. 31, 1955, is extended through Dec. 31, 1956.

Retired Feed Man, Ralph Johnson, Dies

FORT WORTH, TEXAS — Ralph Johnson, 69, former owner of the Tri-County Feed Mills at Mountain Grove, Mo., died here Nov. 15. Mr. Johnson was in the feed business in Mountain Grove for 15 years. He had been living in retirement in Fort Worth the past two years.

Harold A. Swanson

H. A. Swanson Named Nopco Vice President

HARRISON, N.J. — Harold A. Swanson has been elected vice president of the Nopco Chemical Co. in charge of its vitamin and fine chemicals divisions. The announcement was made by Ralph Wechsler, president of Nopco, following a recent meeting of the board of directors.

After having served for many years as general counsel for Nopco, and then for five years as general sales manager of Nopco's Pacific division, Mr. Swanson recently came East to take over his present duties. The divisions of the company he heads up are those which produce Nopcosols and other nutritional supplements for poultry and animal feeds, Vitex vitamin fortifiers for milk and other dairy products, and pharmaceuticals.

A graduate of Northeastern University with a B.S. degree in chemical engineering, Mr. Swanson holds a law degree from George Washington University.

Speaker Named for Pfizer Luncheon

NEW YORK—Dr. Arthur S. Flemming, director of the Office of Defense Mobilization, will be the featured speaker at the Pfizer Home Agents Award Luncheon to be held in Chicago Nov. 28.

Dr. Flemming, a member of the National Security Council and a participant in cabinet meetings at the invitation of President Eisenhower, will speak on "Defense Deterrents."

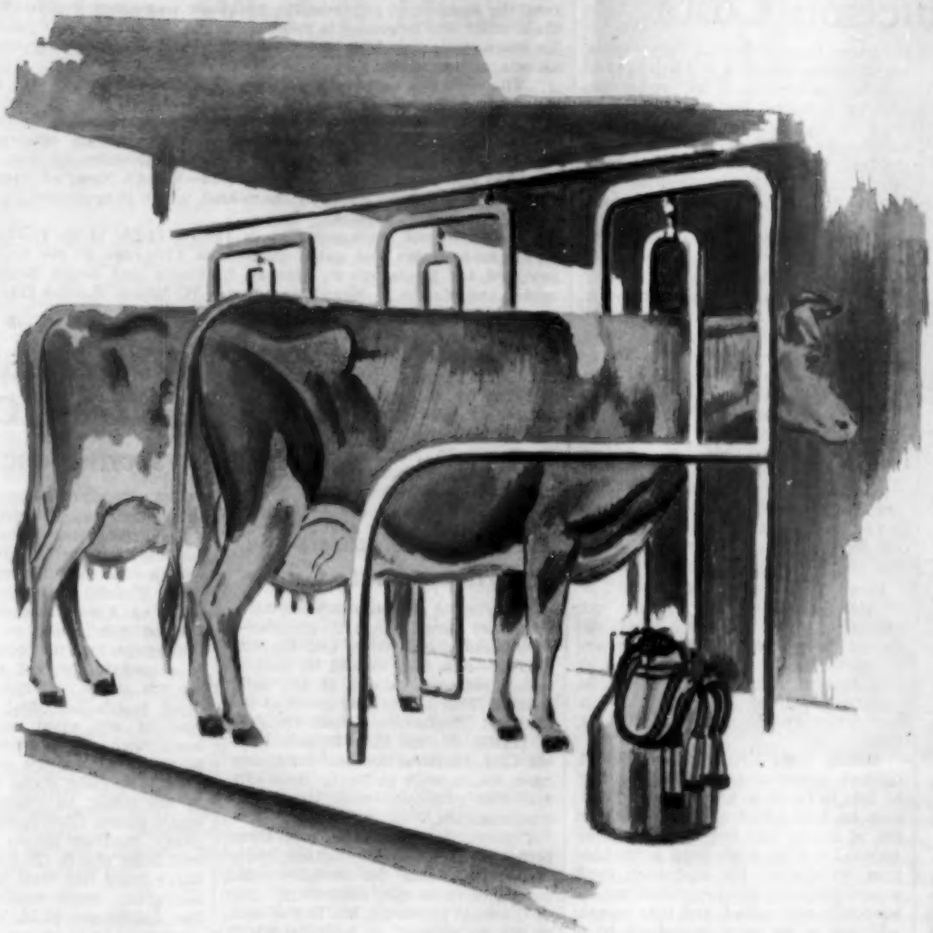
John E. McKeen, president of Chas. Pfizer & Co., Inc., will also speak at the luncheon. Mr. McKeen will deliver an address entitled "Salute to the Feed Industry."

Four outstanding home demonstration agents will each receive $1,500 fellowships from Mr. McKeen. Those receiving the awards will be Mrs. Louise C. Dix, Chambersburg, Pa., Miss Elizabeth Raup, Troy, Ohio, Miss Jean Bradshaw Pegram, Durham, N.C., and Miss Marie Kirkham, Cody, Wyo.

The finals of Pfizer's 1955 National Livestock Judging Contest will also be held at the luncheon. Myron A. Hoff of River Sioux, Iowa, dealer winner, will be weighed at this time and receive one silver dollar for each ounce he weighs.

Official Feed Control Publication Ready Dec. 5

COLLEGE PARK, MD.—The Official Publication, 1956 issue, of the Association of American Feed Control Officials, Inc., will be ready the week of Dec. 5, it has been announced by Leslie E. Bopst, executive secretary of the association. Orders at $5 per copy will be received by Mr. Bopst at Room 036, New Chemistry Bldg., University of Maryland, College Park, Md. Official actions of the association taken during the recent meeting, feedstuffs registration, labeling and sale regulations, analytical procedures and a summary of feed tax legislation are included in the Official Publication. Also being offered by the association is a 64-page volume entitled "Historical Sketch" (1909-1955) which describes the evolution of feed control work. It is available at $2 per copy.



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Feed Men Eye Methods of Reducing Production Costs

Feed manufacturers are becoming more and more conscious of the need to improve production efficiency—to lower costs while turning out quality products—if they are to compete in today's market. They recognize more and more that the difference between profit and loss in this competitive market may be found in the efficiency of mill operations.

This situation was evident in the interest in costs and cost reduction which was shown at the recent Midwest Production School at the Hotel President in Kansas City. The school, held Nov. 7-9 under the sponsorship of the Midwest Feed Manufacturers Assn., drew a record crowd which included many management as well as production men.

One of the highlights of the school was a panel discussion in which several of the speakers answered questions on how to reduce production costs. E. A. Worth, L. C. Worth Commission Co., Kansas City, was chairman. Panel members were Dr. V. John Brensike, USDA, Washington; Erwin Wascher, Honeggers' & Co., Fairbury, Ill.; Fred E. Huttie, Jr., the Mills Mutual, Kansas City; James H. Burrell, James H. Burrell & Sons, St. Louis; Oscar Straube, Pay Way Feed Mills, Kansas City; Harold M. Wies, Quaker Oats Co., Chicago. The discussion actually covered many phases of production, not just costs directly.

Mr. Burrell emphasized that the important thing in reducing costs is better management—including selection and training of top quality men.

Man-Hours Per Ton

Too many plants, he said, are producing feed at rates of 3, 4, 5 or more man-hours per ton. He suggested that 1½ man-hours per ton is "fine," 1 is "excellent," and ¾ is "doggone good." One of the engineers at the school said privately that he would not want a new plant today that could not produce at .8 man-hour per ton. (In these discussions, man-hours cover operations from ingredient receiving through loading out of finished feed.)

Mr. Burrell said a good average plant might use 18 men in production of 100 tons of feed in eight hours. Types of feed in such an operation would be 50 tons of pellets, 30 tons of mash and 20 tons of molasses feed.

Mr. Wascher said modern mechanized plants do well on unloading, pelleting, mixing, etc., but they do not do as well after the feed is made. He had figures from five sizable mills in which 40% of the manpower is expended after the bags are closed, whether the mills use fork lift trucks, hand trucks or conveyors.

Many other points in feed production also were brought out in the discussion session:

Preventive maintenance: Machines should be inspected at least once a year, oftener if there are breakdowns between inspections. A preventive maintenance program will pay in preventing interruptions in production and in reducing maintenance costs after it has been in operation for some time, Mr. Wies said.

Plants in a USDA study of mill operations had 1 maintenance employee for 13 employees. One company represented at the meeting has one maintenance man for every nine workers.

Cost study: Dr. Brensike said his initial mill operating cost study is classified as an "extensive analysis," that USDA will go further now in "intensive studies." It is now studying feed merchandising, will go into production details in case studies, is completing a study of antibiotic and B_{12} use, is cooperating in state college studies relating to feed.

Bag loss: Mr. Straube said that in a plant producing 200-300 tons a day, bag loss for 50-lb. papers might be a ton of feed in ordinary handling. Most bag losses, he said, come from hang-ups along conveyor belts.

Clean-up: In response to a question of clean-up between one mix and another, Mr. Burrell said every plant should have some clean-up between products, that it should take time to stop contamination of feeds. Speakers stressed cleaning of mixers when antibiotics and similar products are used.

Adding fats: Mr. Wascher advised against trying to go too high in use of fats in feeds to be crumblized. He said he had added as much as 5 or 6% of fat to feed but that this level appears a little high from a production standpoint. He said such feed would not make good crumbles unless bentonite was added, and that means addition of an inert ingredient to a high energy feed. Crumbles are not good if up to 5% is added, he said. Mr. Burrell advised limiting fat to 2½-3% if you want good crumbles. He also advised not trying to fix up a "home-made affair" to add fats but to consult with equipment people.

Quality control: Mr. Burrell said the feed manufacturer of the future will flounder without a quality control program. He acknowledged that some mills can't afford an extensive control program, but those who can should have a laboratory and a product control department. The cost of a control plan, he said, will be the salary of a man to run it and the salary of a secretary. Such a control man would work with purchasing and all other departments, coordinating efforts to assure good materials and good processing and handling. A man in the audience who has a small mill said claims on ingredients had paid the salary of his control man and probably paid for a secretary after he instituted such a program.

Other points: Some mills suggest buying alfalfa in pellets and grinding out as needed. . . . Costs go from $1.50 down to $1 for warehousing. . . . Mr. Burrell said that too many firms "let the sales department run the mill," that product lists are too long. One firm with 57 cattle feeds pared the list to 16. . . . With retail bulk feed sales, there should be printed tickets with official weights.

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Advice on Reducing Insurance Costs Given

In trying to reduce insurance costs, there are three things to consider—construction, occupancy and the employees—and they should be part of future planning as well as the daily routine. This advice was given at the Midwest Production School by Fred E. Huttie, Jr., the Mill Mutuals, Kansas City. Construction and occupancy have to do with property insurance and the employee with workmen's compensation.

Construction is divided into three principal classes—combustible, noncombustible and fire resistive—and insurance rates vary accordingly. One of the main problems, Mr. Huttie said, is the building of an addition which in no way conforms to the original structure and is of a type which brings an additional rate charge. It is wise to consult an insurance advisor before proceeding with construction work. Another problem is with openings in fire walls—automatic closing fire doors which do not work.

In connection with occupancy, Mr. Huttie cited various fire hazards and steps to take in preventing fires—such as proper installation of equipment, steps to prevent spontaneous heating, good dust collection, use of steel legs, constant attention to certain machines, the use of "dust tight" motors, good housekeeping, first aid fire fighting equipment, automatic sprinklers. Among the fire hazards discussed were elevator legs (the most serious hazard), grinders, corn shellers, drives, improper electrical equipment, grain driers if not properly installed, poor housekeeping (common in most feed mills).

Workmen's compensation costs run 2 to 4% of the payroll, and feed men should cooperate with safety engineers in preventing accidents so that rates can be reduced.

A Notebook-Full

Every year at the Midwest Feed Production School, the feed men attending are given a notebook to use in taking notes on talks and discussions. This year the number of pages in the notebook was about double that of before; the number was increased in response to requests of previous years' "students" for more space in which to record advice and data given by speakers on all aspects of production.

The enlarged notebook—and the fact that many feed men at the school put it to good use—is somewhat significant in that it is another indication of the increasing interest these days in both new production developments and better methods of handling old problems. With more efficient production becoming increasingly important in today's competitive market, the theme of the 1955 school was "Costs—Automation—What's New." A record crowd of 427 feed men was on hand for the school, which is sponsored by the Midwest Feed Manufacturers Assn.

On these and subsequent pages (10-11, 14-15, 70-71, 74-75) are reviews of the many talks and panel discussions. Coverage of the proceedings was provided for Feedstuffs by Harvey E. Yantis and Roger Berglund, Minneapolis, and Martin E. Newell and James W. Miller, Kansas City.

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Mill Cost Study Explained; Control System Described

The attention being given to costs these days was evident in two Midwest Production School talks—one dealing with operating costs and one with a cost control program.

Dr. V. John Brensike, U.S. Department of Agriculture economist, explained how some of his research findings on feed mill costs can be used to stimulate interest in better cost records, make cost comparisons with other plants, help find areas of high cost in any plant and supplement one's own information when new plants or expansions are planned.

In describing some of the results of his study, he related findings to small plants (averaging 2,200 tons a year), medium plants (31,000 tons) and large plants (81,000 tons). These three types had total operating costs averaging, respectively, $16.43 per ton, $10.98 and $9.14. These costs included all costs of operating the business except ingredients, bags, tags and similar materials, and profits.

Data on labor in production showed man-hours per ton averaged, respectively, 5 hours and 41 minutes, 2 hours and 42 minutes and 1 hour and 54 minutes. Volume of operation, when used as a separate factor, explains 63% of the variation in labor inputs. This doesn't necessarily mean that volume alone explains the variation; rather, it means that variations are explained by volume and related factors such as proportion of capacity used, age of plant, etc.

Regional Data

Regional data showed that southern plants in a certain tonnage range required almost 2 hours more of work to produce a ton of feed than were required in other areas. This may be caused by less mechanization and/or lower labor productivity.

In addition to having higher per ton operating costs, small mills' investments in plant and equipment are larger per ton—$22 against $7 for the large plant.

(Continued on page 74)

WELL REPRESENTED—The feed industry throughout the country was well represented at the recent Midwest Feed Production School in Kansas City. Feed men came from 34 states and two foreign countries, from small mills as well as large mills. And management men, as well as production men, were on hand. Some of the 427 "students" are shown in the pictures above. In the first photo, left to right around the table in the foreground, are W. C. Hodges, J. W. Sloan, J. C. Hodges and A. D. Gerald, all of Cosby-Hodges Milling Co., Birmingham, Ala. In the second picture are Art C. Martin, Martin Hatchery & Mill, Maquoketa, Iowa; Cecil Hardeman, Hardeman Milling Co., McAlester, Okla., and E. L. Marsh, Farr Co., Greeley, Colo. In the third photo, shown talking over production problems are Homer Porter, Farmers Elevator Co., Fort Dodge, Iowa; Robert W. Cox, Sprout, Waldron & Co., Omaha, and Sam Bennett, Wendland Grain Co., Temple, Texas.

Feed Men Hear Talks on Automation, What It Means

The word "automation" has been in the vocabulary of the feed industry, as well as other industries, for the past few years. But new attention to automation — or automatic, highly mechanized operations — was paid at the recent Midwest Feed Production School in Kansas City.

A considerable part of the program was devoted to automation and what it means to feed manufacturing. Some of the comments on the extent to which it can go were considered almost startling. However, it also was noted that automation already has reached into the feed mill in some forms, that its general application will be gradual.

The subject was covered specifically in a talk by Dr. Charles Kimball, Midwest Research Institute, Kansas City, and in a panel discussion. Other discussions of feed production also were related to automation, with increasing mechanization. Members of the panel were Loren Burns, Agri-Tech, Inc., Kansas City, chairman; Harold Stout, Midwest Research Institute; E. F. Clardy, Jones-Hettelsater Construction Co., Kansas City, and Bob Robbin, Hardy Scale Co., Maywood, Cal.

The principal application of automation in feed milling has been in automatic, remote-controlled batching, and this was described in the discussions.

Actually, however, automation cuts all across industry and different phases of business operations — including data processing, materials handling and other operations as well as weighing and processing.

Chief Aims

Principal aims of automation, Mr. Stout noted, include reduction in unit labor costs, reduced wastage and more uniform products.

Speakers said that principles of automation can be adopted by small as well as large feed mills, that some processes may be highly mechanized while others may not be economically automatized.

Mr. Burns said automation is a combination of quite simple elements and that the complexity comes in the combining of the elements into a system that does the job. Proper engineering all through a system is particularly important, and instrumentation is only a part of it.

Many feed men wondered about the minimum size for a feed mill in which automatic proportioning and mixing can be applied. Panel members said it is an individual problem and must be figured out for each case. However, it was noted that there is a trend toward plants with annual production of 25,000 to 50,000 tons, and it was definitely stated that automation would be feasible for such a mill. Also, it was pointed out, it will be more economical and adaptable as time goes on.

Mr. Stout commented that constant production is needed to make it pay, that rate of production is more important than number of tons. As automation expands, the risks of business will have to be taken more by marketing people, who must create and maintain markets to keep plants operating profitably, Dr. Kimball said.

Capital investment is increased with automation, but where it is practical, the investment is paid off rapidly, speakers said. Standard equipment can be used. Many returns from automation also are intangible, Mr. Burns mentioned—such as uniformity and elimination of human error.

Designing System

In designing an automatic, electronically controlled batching system, it is necessary to select the proper number of properly constructed bins, Mr. Clardy explained. There should be a uniform flow of materials from the bins. Gravity may be used, but screw feeders are more desirable, he said. Ingredients are fed into one or more scale hoppers. It may be advisable to use more than one hopper, allowing use of smaller capacity, more accurate scales. The feed then goes to one or preferably two batch mixers and then to holding bins for further processing. The automatic feature is in constant control of materials going to the mixer and then in the mixer and discharging.

Mr. Robbin explained that, with the control panel, complete batches, including sequence of materials, are pre-set, and everything is interlocked. Materials are out of the weigh hopper before a new cycle starts. Mixing time is selected and automatically controlled. And the whole process recycles as desired.

Checks are necessary, and one system is to have tape automatically printed which shows the formulation to be checked against the formula book.

In another talk, on maintenance, Harold Wies, Quaker Oats Co., Chicago, predicted that feed plants some day would be almost completely automatic—as some plants in other industries are becoming. (Feedstuffs Nov. 12.) He said that not only would processing and handling be automatic; inventory data recording, ordering, billing, etc., would be automatic.

Dr. Kimball said that automation would be a gradual thing, being adopted in stages in different industries. He also noted that it is a relative thing. What is considered automation in one industry may be just mechanization in another. He cautioned that it is possible to go too far with automation, losing flexibility and economy. Good operations research is necessary, he emphasized.

• • •

Increasing Automation Emphasizes Need for Maintenance Programs

The increasing complexity of feed manufacture and the trend toward automation have greatly magnified the importance of good maintenance programs, Harold M. Wies pointed out. Mr. Wies, with the Quaker Oats Co., Chicago, noted that the feed industry, in comparison with earlier years, has already gone a long way toward automation, that it now has many more processes and many more machines. With these changes it has been profiable to add more machanics, but one thing the industry has not done is to organize maintenance departments or spend thought on maintenance that is spent on plant improvement.

It may be startling to contemplate, Mr. Wies said, but the almost completely automatic feed plant will some day come, and then there will be almost no men in the plant except maintenance men.

With the first steps taken toward automation and the next steps coming faster, Mr. Wies said, each feed production man must do these things:

1. Train skilled mechanics. Teach them more about hydraulic and electronic controls.

2. Install a preventive maintenance program. In the future, the maintenance department won't be able to wait for a machine to break down and then fix it; the cost will be too great. Already some machines are tied together. Preventive maintenance is needed to eliminate costly losses of production while one machine is being repaired.

3. Standardize equipment. With every similar machine in the plant alike, repair work can be done more quickly and repair part stocks will be reduced.

REVEALING THE INTERESTING — This picture doesn't have much to do with feed production, except maybe packaging. But this scene was a high spot of the recent Midwest Feed Production School in Kansas City, and it did illustrate a couple of points. Dr. V. John Brensike of USDA, who has been studying feed mill operating costs, had commented earlier that an initial survey in an industry is like a Bikini bathing suit—it "reveals the interesting but covers up the vital." The next day, Oscar Straube of Pay Way Feed Mills, Kansas City, presented his previously prepared talk on quality control, which included a reference to taking a good look at ingredients—something like the "Bikini stare, which gets down to bare facts." Well, Mr. Straube was prepared to illustrate the points which he and Dr. Brensike had brought out. When he reached the place in his talk where he referred to the Bikini stare, in walked the lovely Bikini-clad lass shown above. In case you're interested, that's Mr. Straube on the right.

Major Share of Mill Labor Goes for Materials Handling; Methods Analyzed

The importance of efficient materials handling was stressed by Richard Sheehy, The Quaker Oats Co., Chicago, as he noted that from a labor standpoint, actual processing requires a relatively small portion of expense and a major share goes for handling.

Discussing savings in bulk ingredient handling, he assumed that a 50,000-tons-a-year feed operation would have a bulk facilities installation cost of $50,000, figuring 500 tons of storage at $100 a ton. Gross savings, including sacks and handling, would be $3 a ton on 25,000 tons (assuming half the ingredients, grains, are already bulk), or $75,000. If net savings of $1 per ton could be made, it would take two years to pay for the project providing all the saving was retained.

Mr. Sheehy said that for unloading, power shovels, scoop type fork trucks, pneumatic systems and automatic car dumpers are all being used at his company's plants, and each has its place. In recent years, pneumatic systems have increased because of cleanliness, efficiency, flexibility.

Binning Problems

Mr. Sheehy also discussed binning problems, noting that the touchiest specification in ingredients is moisture. Round tanks, he said, should have a conical hopper with a minimum slope of 60°. Square or rectangular bins should have one or two straight sides and a minimum pitch of 70° on the sloped side of the hopper. Mr. Sheehy mentioned devices used to prevent bin bridging, including center cables through the tank with attached plates, lines running horizontally or vertically that can be moved, and air panels inside the bin. One of the best defenses, he said, rests with good inventory control, keeping ingredients moving and using rigid purchasing specifications.

Recently, Mr. Sheehy said, his firm has been trying bulk tanks for finished feeds with an augur built into the hopper itself. The inclined augur extends up so that trucks can be loaded. Installation costs are cut by having the hopper almost touching the ground and avoiding steel and erection for overhead tanks.

Sack Handling

Mr. Sheehy, discussing sacked ingredients and feeds, described an involved study in handling methods. In the following data, certain assumptions are made—that a man can lift up and put down 200 100-lb. sacks an hour, that he can travel or walk 240 ft. a minute.

In unloading a box car containing 600 sacks of ingredients and moving the feed 240 ft. to storage, an entirely manual operation — obviously not common—requires 23 man-hours. With a hand truck and 5 sacks on a load, the total time is 10 man-hours.

With a conveyor system—with no man-hours in transporting the feed—6 man-hours are needed, including piling on conveyor and repiling in storage. With a fork truck system, 3 man-hours are needed to pile the feed on pallets in the car. Total travel time for the truck would be only 20 minutes, assuming a speed of 720 ft./min., 20 sacks per pallet, and no

(Continued on page 14)

TORA

Red Star Yeast & Products Company announces the world's largest production of Torula Yeast...primary-grown for animal nutrition

The tremendous expansion of the feed industry in recent years has increased feed yeast requirements to the point where it is uneconomic for the feed industry to depend on so-called by-product yeasts. Red Star believes that producers of animal feeds and feed supplements need a dependable, continuous source of yeast supply—processed expressly for their use, ready to meet all requirements regardless of season. This is what Red Star production of Torafeed is intended to do.

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Torafeed is not a leftover product. It is primary grown, exclusively for the feed and allied industries. Torafeed is designed and processed as a high protein food source, meeting highest standards of quality, uniformity, flavor and nutritional value. Furthermore, special effort is made to preserve the important undetermined factors which give yeast a food value beyond the strict analysis of protein, vitamin and mineral content.

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Plasmolized Torafeed, a plasmolized Torula Yeast, is a development of the Red Star laboratories. It is a concentrated nutrient for use in feed supplements for ruminant animals. Its ability to stimulate digestion in the rumen is outstanding.

In tests at Iowa State and other agricultural stations, the addition of Plasmolized Torafeed to high roughage diets has been made to increase roughage conversion, improve appetite and produce greater weight-gain ratios.

Basically, Plasmolized Torafeed is protein-vitamin-mineral rich Torula Yeast. The exclusive Red Star process of plasmolization tends to render the protein fragments in the yeast more readily available for assimilation by the rumen bacteria. It is believed by some authorities that this process of plasmolization also increases the availability of the unidentified beneficial growth factors which are accepted as inherent in yeasts.

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In the revolutionary new Economy Supplements recently reported on at Iowa State College, Plasmolized Torafeed contributed to a lower feed cost of gain, a higher selling price for the cattle, and a greater margin per steer over feed costs. See the new Torafeed booklet for complete details of these experiments.

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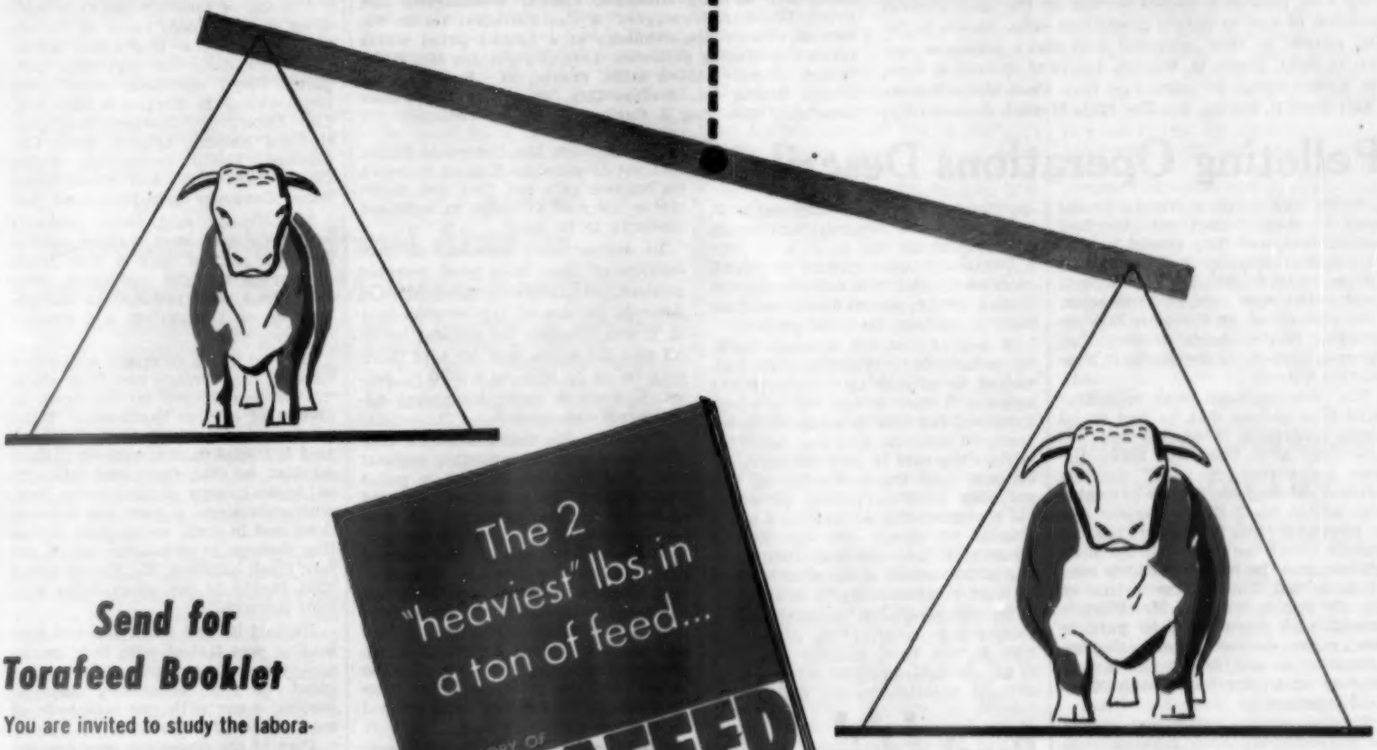

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ANSWERING QUESTIONS—Several of the speakers at the recent Midwest Feed Production School in Kansas City took part in a special session on the all-important problem of how to reduce production costs. Shown in the top picture as they answered feed men's questions are, left to right, James H. Burrell, James H. Burrell & Sons, St. Louis; Oscar Straube, Pay Way Feed Mills, Kansas City; Fred E. Huttie, Jr., The Mills Mutual, Kansas City; E. A. Worth, L. C. Worth Commission Co., Kansas City, panel chairman; Harold M. Wies, Quaker Oats Co., Chicago; Dr. V. John Brensike, USDA, Washington, and Erwin Wascher, Honeggers' & Co., Fairbury, Ill. In the bottom picture are members of a special panel which covered packaging problems. Left to right are Mr. Wies; Walter Stohrer, Allied Mills, Peoria, Ill.; James Leker, Staley Milling Co., Kansas City, chairman, and Frank Greeley, Fulton Bag & Cotton Mills, New Orleans.

Pelleting Operations Described

Pellet equipment operators should work in close contact with the feed formulators, and they should be able to examine visually a formula and advise as to feasibility of making a good pellet and rate of production. This was noted by Kenneth Winterscheidt, Winterscheidt Milling Co., Seneca, Kansas, at the Midwest Production School.

Mr. Winterscheidt said regarding hard type pellets that he had found feeds containing 4 to 8% fat and less than 10% fiber will make the best pellet through a ⅝" die. He advised keeping the pounds per cubic foot within 40-45 lb. As the die size is increased, the fat content should remain about the same but the fiber content may be higher. Density may be decreased. The reverse is true as the die size is reduced. Mr. Winterscheidt said feeds of small particle size make better pellets. Sodium bentonite, he said, has proved a good binding agent for formulas hard to hold together.

In discussing a pellet installation, he suggested an open scalping shoe between the pellet mill and cooler to remove fines coming off the mill. This, he said, improves the cooler efficiency by allowing air to move through freely and the total amount of feed to be cooled is reduced somewhat. He suggested a closed scalper after the crumblizer and ahead of the packer for purpose of dust control.

Mr. Winterscheidt noted that steam for pelleting should be as hot and dry as possible. An old but good test for mash condition after steam is to put a small amount between the thumb and forefinger and if it sticks together in the size of a nickel, the mash is conditioned about right.

He suggested that rolls be set so that when the machine is running full speed, the friction of the clean die and rolls turns the rolls. Then when the machine is shut off and the die is revolving about ¼ full speed, the friction should be decreased to where the rolls will cease turning. When the rolls are adjusted to this point, they will not be tight enough to cause excessive wear or loose enough to cause plugging. Mr. Winterscheidt adjusts the rate of flow of mash into the pelleting chamber until the motor is pulling 60 amps.

When the pellet mill is shut down, he runs 50 lb. of bran soaked in a certain oil through the machine, which acts as a lubricant and pushes feed out of the die.

For a soft pellet system, he recommended a pellet mill, cottonseed meal duster, cooler, second duster and possibly a scalper, then the packer.

A test of feed and molasses ready to pellet, Mr. Winterscheidt continued, is to pick up a handful and squeeze it into a ball. If it sticks together, the feed is ready to be introduced into the pelleting head. He adjusts the rate of flow and molasses content until the motor driving the pelleting head is pulling 60 amps. He recommended introducing a small amount of steam into the mixing chamber to keep the feed from sticking to the outside of the chamber and to improve absorbency by heating.

Mr. Winterscheidt recommended a second dusting after the cooler. He said he has been packing all types of high molasses pellets in paper bags without experiencing any difficulty.

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Panel Advises on Pelleting Problems

Questions regarding use of fats in pelleted feeds were answered by the production school panel which covered pelleting problems. Panel members were Allen Heidebrecht, Paymaster Feeds, Abilene, Texas, chairman; Kenneth Winterscheidt, Winterscheidt Milling Co., Seneca, Kansas; Raleigh Hays, Dannen Mills, St. Joseph, Mo.; Ed Meakin, California Pellet Mill Co., San Francisco, and J. L. Grahek, Sprout, Waldron & Co., Muncy, Pa.

Mr. Grahek said fat should increase the life of a die and boost rate of production, but it makes pellets softer. As much steam and heat as possible help in pelleting—assuming 2% of fat in the formula. A higher fat percentage is probably too high, Mr. Grahek said. As for 3% or more fat, it was said that some try to make such pellets, that trial and error are necessary. The panel was asked whether fat could be added to the outside of crumbles; Mr. Winterscheidt said that this probably would result in a "gummy mess," that there would be bleeding through the bag.

In high molasses pelleting, it was stressed, high absorbency materials should be used. Mr. Hays said USDA had put as much as 75% of molasses on bagasse pith but that this material is not now available in sufficient amounts to be used.

In answer to a question on percentage of fines in a good crumble product, Mr. Winterscheidt said it depends on size of the screen—that is, if you consider the amount taken off and not in the bag. He said there may be up to 10% on a 3/16 in. pellet. If there is more, equipment adjustments are needed.

The panel was asked about the possibility of making granules without first running feed through a pellet machine, and the equipment men said it would not be successful. In connection with this, they said they did not know how one of the present crumble-type dog meals is made. The questioner also mentioned the possibility of making granules by a flash drying process—dampening the feed and then running it through a dryer. During this discussion, Mr. Meakin noted that the pellet mill has been found to be the most efficient method to apply pressure.

Other comments by panel members: Each formula is different, and common sense and trial and error should be used in determining amount of steam. . . . After going through a cooler, pellets should be down to 12-15° above temperature of the air put through the cooler; if humidity of air discharging exceeds 60%, more air is needed. . . . A steam separator should be used ahead of a pellet mill; a gravity steam trap is not satisfactory for removing free moisture. . . . Many lubricants are now available which are satisfactory; greases now do not contain chlorinated naphthalene, which has caused X-disease in cattle. . . . Worn rolls cause excessive fines; there must be uniform clearance between rolls and die. . . . Some use a close tolerance on dies and change often; generally they should be changed when capacity is falling and pellets are not as good. . . . If it is necessary to elevate hot pellets, air is the best system; there is very little more breakage with air on hard pellets and no more on soft pellets. . . . With a new die, production should be started slowly; the holes have to become smooth. . . . High molasses pellets, ⅝ to ½ in., should be cooled for 30 minutes. . . . A scalper ahead of a pellet cooler formerly was recommended, but often there is not room for it.

MATERIALS HANDLING

(Continued from page 11)

time for a second piling since the pallets need only be set down. Thus the total time for unloading the car is 3⅓ man hours, less than all other systems for the job described.

Mr. Sheehy said the fork truck system is more efficient in use of labor than the conveyor system except where great distances (with longer travel time for the truck) are involved. A conveyor system is always more efficient than the two-wheeled truck if sacks have to be piled up at the storage area, and it is always more efficient to use the fork truck than the manual truck.

By comparing manpower efficiency and considering size and other factors in a particular operation, the best system from an investment standpoint can be determined, Mr. Sheehy said.

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Fork Truck Handling Questions Covered In Panel Discussion

The use of fork lift trucks in handling finished feeds came in for attention during a production school panel discussion of materials handling. Panel members were John Heimovics, J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kansas, chairman; Richard Sheehy, Quaker Oats Co., Chicago; David Armstrong, Fuller Co., Kansas City, and Hugh Scott, Screw Conveyor Corp. Hammond, Ind.

Mr. Sheehy said there probably would be less bag damage with a conveyor system than a fork truck system if straight conveyors were used, that conveyor system damage depends on the system and number of turns, etc.

He said in his company fork-truck handled bag damage now runs about 1% or less figured on the basis of arrival of cars at destination. Take-it-or-leave-it pallets are used, and feed is loaded in cars without pallets. At first, he said, there was difficulty in loading cars satisfactorily, but, with experience, a good job is being done and in some cases there is less bag damage in shipments which get fork truck handling. Mr. Sheehy noted that taping in car doors helps prevent damage.

He said he had found finished feed loading was fastest with fork trucks and take-it-or-leave-it pallets. One plant, he said, is getting close to loading a car with one man-hour of work under this system.

Part of the discussion was devoted to air and mechanical unloading systems, the latter including car shovel, pit, pit conveyor and elevator leg. Capital investment was said to be less or in some cases about the same for a complete mechanical system. The problems of product loss and contamination are less with an air system, speakers said, while labor is about a stand-off and maintenance was said to be easy with both. Mr. Sheehy said many use a power shovel system for grains and air for soft ingredients, with product loss not much of a problem on grain.

To help keep bran from bridging, it was suggested that hoppers have as much slope and as large an opening as possible. Often bran bridges above the hopper, and the feed men were urged to keep stocks at a minimum, keep them moving and hold moisture content. When bran does bridge, it may be necessary just to "wrestle it out."

In answer to a question on degree of incline for a tubular screw conveyor, Mr. Scott said 45 degrees was the worst. He suggested that a horizontal and vertical combination is best and is easier to install, with less of an obstruction problem. Standard clearance between screw and trough in a conveyor was said to be ½", with the practical minimum ¼".

Molasses Mixing Methods Outlined

Of all the materials available to the feed manufacturer, molasses probably demands the most compromises in handling and mixing, said Phil C. Murray, Pillsbury Mills, Inc., Clinton, Iowa, in a Midwest Production School talk on molasses mixing. Sometimes feed formulators call for more molasses than is practical from a production standpoint in a given mill. This, Mr. Murray said, can be solved by talking with the nutrition department so that no more will be included than can be handled successfully.

He noted that small amounts can be profitably used in poultry feeds to replace corn. With the small additions, care must be taken to insure that small molasses balls are broken up.

Some feed men add a small amount (up to 5%) of molasses directly into a horizontal mixer, and this will do a pretty good job of mixing if the molasses is directed into the upsurge of the feed, about 10" away from the mass, Mr. Murray said. Molasses can be sprayed here but it will start to form globules again if it is not put on the material from a distance of less than 15". If the addition is accomplished in this type mixer, the material should be run through a blender or high speed mixer to break up balls.

With hog and sow feeds, usually 3 to 12% molasses is added, depending on the type of feed or supplement. Compared with a protein supplement, a full feed will usually allow twice as much to be added. Mr. Murray said the paddle type mixer is ordinarily used to mix molasses on hog feeds, with the exception that some feed men have installed molasses pumps for additions directly to pellet mills or the conditioning chamber above the pellet mill. He said that where the dry material can be measured and the molasses regulated onto the feed to be pelleted, this allows the feeds to go straight to the bin above the mill without going through a mixer.

On the preceding feeds, a high speed mixer is used to beat the molasses into the dry material, Mr. Murray continued. It is probably advantageous to force the molasses through a spray head if it is possible with available pump pressures. It is permissible to run the molasses through small nozzles and the action of the mixer will pretty well disperse and mix the molasses.

Cattle Feeds

In beef feeds, we want somewhat the same action for molasses mixing as in hog feeds unless there crimped products are used in the feed, Mr. Murray said. The amount of molasses will vary from 7 or 8% in a protein supplement to 20% in a fattener, which will have some fibrous material. Another steer feed is the high molasses (35-40%) pellet that is dusted, tempered, sacked and sold. Some feed men have difficulty with this pellet because of insufficient tempering or an improper formula.

In dairy feeds, points to consider include protein level and whether or

(Continued on page 71)

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Production School Panel Answers Questions on High-Molasses Feeds

High molasses mixing was the main topic of conversation in the Midwest Production School's molasses panel discussion moderated by Guy L. Cooper, Jr., O. A. Cooper Co., Humboldt, Neb. Other participants were Phil C. Murray, Pillsbury Mills, Inc., Clinton, Iowa; John Czarev, Czarev Milling Co., Independence, Mo., and Joe Wenger, Wenger Mixer Co., Sabetha, Kansas.

In answer to a question about a 50-50 molasses feed, it was brought out that the other ingredient in the mixture probably is dehydrated corn cobs. To produce high molasses pellets of 30-40% molasses, it was agreed that a second dusting is not required but that a few more feet of cooling were most beneficial. Also, before the molasses goes into the pellet mill the tank should be brought to about 120° and the head of the pellet mill also should be heated. This practice will do away with the probability of molding, it was pointed out.

One question concerned the height to which 15-18% molasses feeds could be stacked without the danger of caking. It was believed that seven sacks were a safe limit.

The advantages of the use of steam were stressed by the panel. Added moisture to the molasses as it goes into the mixer takes the stickiness out and tends to keep the feed from getting hard in the sack.

Applying air pressure to molasses as it is administered to the feed mixture is a good practice, according to the panel. Pressure varying from 30 to 100 lb., depending upon the mixture, forces a good introduction of the molasses.

The best advice to remember is that the higher the molasses content the more the feed must be cooled and conditioned for the sack, the panel concluded.

Blending Discussion Focuses Attention on Mixing of Fats

A great deal of interest in blending fats was evident at a Midwest Production School's specialized session on blending ingredients, and the sessions on this topic attracted a substantial portion of the registrants. The panel in charge of this part of the program was composed of W. L. Brickson, Consumers Cooperative Assn., Kansas City, chairman; Larry Alley, Pay Way Feed Mills, Kansas City, Ted Stivers, milling engineer, Decatur, Ga., and John Branch, Nutrena Mills, Inc., Kansas City.

Mr. Branch said that mixing fats into feeds was an easy operation and that the double ribbon-type mixer does a good job if the temperature of the fat is right. He said his experience has been satisfactory with fat temperatures of 180 to 210°. Mr. Branch said that a spray injection into the mixer is the best method and that the spray should be introduced at four points at least. Fat should not be injected until the mixer is fully charged.

Mr. Stivers said there is less lumping of the fat in the finished mix if it goes through a premix stage. In such systems the fat is added at more than one point on the stream just ahead of the mixer. This has proved a successful application method with fat temperatures of 150 to 160°.

Mr. Branch agreed that at temperatures of 140° he had encountered some balling with a 3% fat mix and that in cold weather under such circumstances it might be necessary to run the finished mix through an Entoleter or feed dresser. But with high enough fat temperatures, there is no such trouble encountered, he said.

In answer to a question of how much fat can be added to a feed and still handle that feed through bucket elevators, Mr. Branch said he had handled as much as 6% added fat through a bucket system without trouble.

To the question of how much added mixing time is necessary when fat is added, no exact answer was possible for all circumstances, but Mr. Branch said his experience favored 2½ minutes additional, after the fat had been shut off, when a high percentage of fat is involved. He tried mixing times up to four minutes after and got no better results. These times were in addition to a one minute mixing time required to load. These figures were for batch mixes. On continuous mixing systems no trouble occurred when the mixer had a 6-ft. barrel and paddles were set so that material did not move through too fast. A molasses mixer can be adapted to fat application, it was pointed out.

On the subject of batch vs. continuous mixing, the answer provided by the panel was that each had its place. In a mill devoted to long runs of 50 tons or more of the same type of feeds, there is nothing that will outdo a continuous system, it was said. But in many feed plants there is a trend toward batch mixing because of the large number of different feeds produced.

The panel generally agreed that 10 lb. per ton is the safest and most reasonable amount of premix to be added for best blending results, although in some circumstances it is theoretically possible to go down as low as 1 lb. per ton, but it is not recommended.

There was discussion of the electrostatic effects of various ingredients, and it was pointed out that very dry materials and very finely ground materials are particularly subject to this difficulty. One member of the audience said the addition of tricalcium phosphate seemed to help in this situation.

Some discussion also took place on the use of tracer materials to check the thoroughness of mixes. Coccidiostats can be helpful in this problem and by proper studies it may be found possible to cut mixing times in some plants. Mr. Brickson said he has been running experiments with a dye added in 9 gram amounts to the premix and which can be easily tested afterward, even in the field. In checking, the feed sample is extracted with a solvent and the extracted portion put on filter paper when it is dry. Water is then added and the colored dye spots show up clearly on the sample residue. The material is still in the experimental stage, he said. The cost would be about 5¢ per ton.

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Engineer Discusses Systems for Dry And Wet Mixing

A comprehensive paper on mixing was presented by T. E. Stivers, milling engineer, Decatur, Ga.

Aside from some basic, reference-type data on mixers, systems, mixing times, etc., Mr. Stivers made various comments on mixing operations.

He noted that horizontal batch mixer speeds vary widely depending on size and other factors. Before changing the speed on any mixer he

(Continued on page 70)

PRODUCTION SCHOOL SPEAKERS—Some of the speakers who covered various aspects of feed production at this year's Midwest Feed Production School are shown here. In the first picture, left to right, are G. R. Peterson, Pillsbury Mills, Inc., Clinton, Iowa, who presided at one of the sessions; Dr. Charles Kimball, Midwest Research Institute, Kansas City; Harold Wies, Quaker Oats Co., Chicago; C. A. Tolin, Ralston Purina Co., St. Louis; James C. North, Nutrena Mills, Inc., Minneapolis, and Dr. John L. Holmes, Iowa State College. In the second photo are Max Shields, Albers Milling Co., Kansas City; Elmer Winterscheidt, Winterscheidt Milling Co., Seneca, Kansas, president of the Midwest Feed Manufacturers Assn., and Dwight Dannen, Dannen Mills, Inc., St. Joseph, Mo., chairman of the association's production school committee. The third picture shows Glenn Eikenbery, Kansas City fire department, who spoke and presented a demonstration on fire prevention; Kenneth Winterscheidt, Winterscheidt Milling Co., and D. K. Webster, Jr., H. K. Webster Co., Lawrence, Mass., chairman of the board of the American Feed Manufacturers Assn.

Scientists Study Possibility of Growing Algae in Sewage to Produce Feed

EDITOR'S NOTE: California scientists are investigating the possibility of commercially growing algae in sewage and using the product as a high-protein feed material. The following article, which comes from the University of California College of Agriculture, Berkeley, tells of the "sewage farm" research and the reported possibilities.

v v

Would you like to grow a crop that you could harvest not once, twice, or four times a year but every two days? A crop yielding 20 times the California average, requiring no fertilizer, no insecticides, no expensive seed investment?

Such a crop is already being grown by the University of California's Engineering Field Station at Richmond, Cal. It is probably one of the strangest farming experiments in the world. Cultivated not in soil but in sewage, the product is harvested not by agriculturists but by sanitary engineers.

This farm product is made up of algae—millions and millions of the one-celled plants that were on earth long before dinosaurs. Algae were the ancestors of plants that enabled the dinosaurs to lumber around with a full belly for a few million years. Now, with the world's population soaring, these same algae may enable humans to achieve the full dinner-pail for the first time.

Down on the "Farm"

When you visit the field station to see the "algae farm," the guard at the gate readily directs you past many low-lying buildings toward the glistening San Francisco Bay. You park at Building 110 and walk through a salt-sea breeze toward a row of tanks that look like fishponds full of pea soup.

From there on you are the guest of Harold B. Gotaas, professor of sanitary engineering, and his assistants, William J. Oswald, assistant research engineer, and Clarence Golueke, assistant research biologist, who run the project under Prof. Gotaas' supervision.

First they take you up a ladder to the top of a 20-ft. tank filled with a doubtful liquid. The lively bay breeze makes unnecessary Prof. Gotaas' explanation that the tank contains city sewage.

You climb gingerly down and trudge back to the pea-soup tanks—four in all, varying in depth of the liquid from 4 to 24 in. Here the smell is more pleasant—a grassy odor. The doubtful hue has become fresh green; already the algae are doing their work of cleansing the sewage.

Briefly, here is what happens. Cooperating with bacteria in the sewage and using sunlight as fuel, the algae provide oxygen needed by the bacteria to break down organic wastes in the sewage. The bacteria in turn provide carbon dioxide, ammonia and other nutrients released from the wastes. These nutrients are needed by the algae to multiply into a protein-rich harvest.

A Double-Barreled Program

The Richmond project is a double-barreled program. First, it has good possibilities for producing excellent livestock and poultry feed. Second, it may enable cities to dispose of wastes that run to staggering totals and cost millions of dollars to treat.

Cities near an ocean spend up to $60 per million gallons for equivalent sewage treatment, Prof. Gotaas explains. Inland the cost may run even higher—up to or over $100 per million gallons — because sewage must be more thoroughly cleansed before it is dumped into lakes and rivers.

But if, instead of dumping the sewage, you grow algae in it, these tiny plants not only do the cleansing but produce about $100 worth of high-protein feed for each million gallons treated. In other words, instead of paying up to $100 or more, cities may save much of this cost reclaiming nutrients in the form of algae. Algae also perform several other services. They salvage minerals and vitamins. And they make sewage water fit for irrigation. In parched California, the latter use alone might pay for the treatment.

The value of nutrients lost in human wastes runs into big money.

"American domestic sewage contains $250 million worth of nitrogen a year," says Prof. Gotaas. "It also has about $600 million worth of phosphorus, and more millions in nutritive and important elements. We use these materials in animal waste—as manure—but in human waste they are ordinarily lost because we are afraid of passing on disease. The algae salvage the nutrients while treating the wastes. And the harvested algae can be sterilized."

In the Name of Science

Near the tanks—each 1/70 of an acre, 14 by 65 ft.—is a wooden shed. It contains centrifuging equipment to harvest the algae. Inside, a whirling mechanism separates the solids—the food—from the water. When a batch is "done," Mr. Oswald stops the machine, scrapes a sample from its funnel-shaped interior, and spreads the glistening green paste on a sheet of metal in the sun.

"It'll dry in a jiffy," he says.

Soon the paste is a dull green cake. Prof. Gotaas crumbles it in his hand. "Next we purify it with heat, then put it through a coffee-grinder. We get a lot of dry powdery meal and store it in jars, or sometimes we make pellets for certain tests."

In the name of science you try a

(Continued on page 72)

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We are urging growers to discuss Lipamone with their feed dealers. Are you fully acquainted with the Lipamone story? We'll be glad to give you complete information and to answer your questions.

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Soybean Crushings In 1954-55 Second Largest of Record

WASHINGTON—Crushings of soybeans for oil totaled 249 million bushels in 1954-55, according to the Bureau of the Census, U.S. Commerce Department. This is 36 million more than in 1953-54 and with the exception of 1950-51 is the largest of record. The outturn of oil per bushel of soybeans was 10.9 lb. in 1954 as compared with 11 in 1953-54 and 10.8 in 1952-53.

Supplies of soybeans for 1955-56 are estimated by the U.S. Department of Agriculture in the quarterly soybean market summary at 385 million bushels, or 41 million more than for 1954-55, the previous record. Carryover stocks of old crop soybeans in all positions on Oct. 1 totaled 10 million bushels, well above the 1.3 million a year earlier.

A record crop of 375 million bushels was indicated on Oct. 1, according to the USDA Crop Reporting Board. This is 9% above the previous record crop of 343 million bushels harvested a year ago. This sharp increase is due to an 8% increase in the acreage since the yield per acre is only slightly above last year.

The quality of the crop appears good, USDA reports, with most receipts indicating good test weight and low moisture. In September, 27% of the receipts graded No. 1 this year as against 20% for September, 1954.

Based on October estimates of production and carryover, supplies of soybeans for 1955-56 total 384.8 million bushels. This compares with 344.1 million for 1954-55 and 278.7 million for 1953-54.

Exports of soybeans last season totaled nearly 60 million bushels, an increase of nearly 20 million over the previous record in 1953-54. Exports of soybean oil, October, 1954-August, 1955, including crude and refined, totaled 71.3 million pounds compared with 74 million for October, 1953-September, 1954.

Prices Improved

Soybean prices declined sharply at the end of last season reflecting the record crop. Farm prices dropped to an average of $2 bu. in September. However, with improved demand at the lower level and some deterioration in crop prospects, prices advanced to an average of $2.08 in October.

The 1955 crop is supported at an average rate of $2.04 bu. as against $2.22 the rate for the 1954 crop. Last season farmers put a record of 41.4 million bushels under price support of which around 15.5 million were delivered to the Commodity Credit Corp. Of this the CCC had sold around 14.8 million of which 4.5 million were sold for export and the balance for domestic use.

The margin between the market price of oil and meal obtained from a bushel of soybeans and the cost of soybeans averaged 31¢ during October. This compares with 20¢ for October, 1954, and 19¢ the average for the 1954-55 season.

Canada to Provide Loans on Grain

WINNIPEG — The Canadian government is to guarantee bank loans to growers on farm-stored grain up to a maximum of $1,500.

This announcement was made by Clarence D. Howe, minister of trade and commerce, when he addressed the annual meeting of the Saskatchewan Wheat Pool Nov. 5. The maximum loan will apply to any one producer and will bear interest at 5%, Mr. Howe stated.

Loans may be lower than the maximum if the value of farm-stored grain that the producer is entitled to deliver is less than $3,000.

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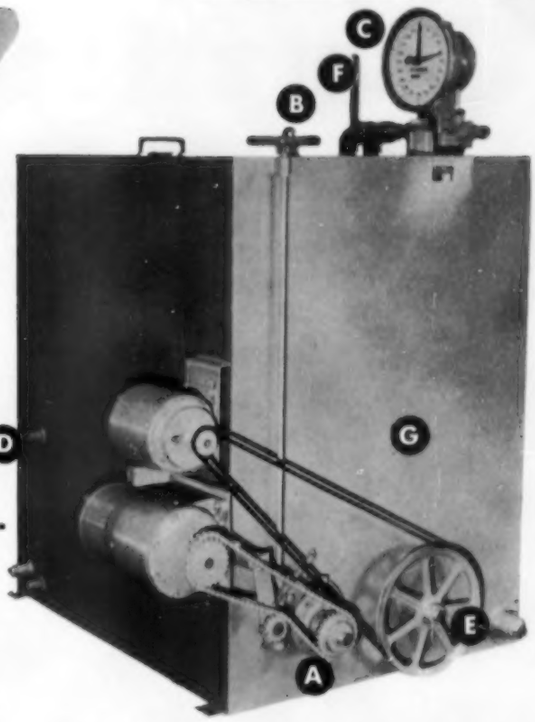


Here's the equipment to end all your Animal Fat blending problems. The new Wenger Series 100 Fat Feeder makes it easy and profitable to blend liquid Animal Fats into hard or soft Pellets or through high-speed mixers in your formula feeds, smoothly, without "balling," clogging or mechanical troubles . . . or affecting the fat stabilizer. Wenger designed this new proportioning feeder to eliminate all contact of stabilized animal fats with copper, bronze or brass. With the Series 100 Feeder you can inject liquid fat directly into the tempering chamber of your hard pellet mill; into the mixing cylinder of any high-speed mixer or Wenger Hi-Molasses Mill.

No Brass, Bronze or Copper ever comes in contact with the animal fats added through the special Sorbite pump. Therefore the stabilizing agent is not affected and the problem of copper-toxicity in the feed is eliminated.

Cut cost of pelleting by blending animal fats which lubricate the dies, reducing wear and replacement to a fraction! Your pellets actually cost **less** with animal fats added!

HERE'S HOW WENGER FAT FEEDER SOLVES YOUR PROBLEMS!

A **Famed Wenger Proportioning Pump** built into the tank so that the pump is always the same temperature as the fat. This eliminates the danger of the fat setting in the pump. Pump guarantees perfect uniformity of flow at any desired rate of fat delivery from 1 lb. to 50 lbs. per minute. Cannot clog or become obstructed by fat particles.

B **Exclusive Wenger Pump Control**—does what no valve can do—feed any volume without clogging. Simple dial setting accurately regulates the flow. No restrictions or valves in fat flow line.

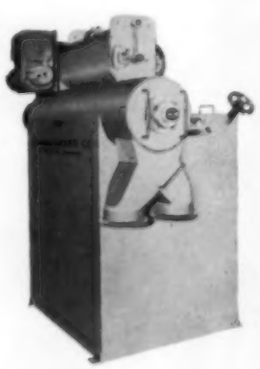
C **Special Liquid Fat Meter**—10" face . . . dual setback hands . . . recording 6-figure totaling device . . . calibrated in lbs. of fat.

D **Steam Temperature Controls**—Fully adjustable for 125° to 175°—the perfect temperature for liquid fat feeding . . . iron heating coils . . . thermometer and automatic thermostat.

E **Special Built-in Agitator**—keeps liquid fats uniform . . . driven by 1½ h.p. TEFC motor.

F **By-Pass Valve**—permits recirculating fat without shutting down unit.

G **400 Gallon Tank**—provides constant supply to your pellet mill or mixer.

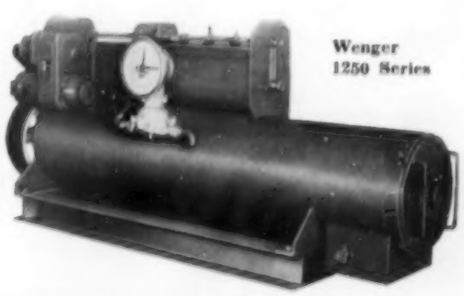


MIX UP TO 15 TONS OF FAT-BLENDED FEED AN HOUR WITH NEW WENGER SERIES 750 FAT MIXER!

For fast, efficient fat mixing there's nothing on the market that can touch the new Wenger Series 750 Hi-Speed Fat Mixer. Has all the anti-corrosive and special fat metering features of Series 100 Fat Feeder—cast Sorbite pump, special agitator, automatic temperature controls, liquid-fat meter.

Series 750 Fat Mixer (on left) can be used as either a fat or molasses mixer or, when coupled with Wenger Series 100 Fat Feeder, for mixing *both* fat and molasses.

Mix up to 40 tons per hour with Wenger 1250 Series. Ask for information about Wenger's new 1275 Series Fat Mixer (not illustrated) which is equipped with its own built-in fat tank. Mix several liquids simultaneously—fats, molasses, fish solubles, fermentation solubles, liquid whey, etc.



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Top Junior and Senior Finalists (432 prize winners) judge live pigs, dairy cows and laying hens for top prizes of the $20,000 in prizes.

Weighing-in of top winner of feed dealer contest for top cash prize. (One silver dollar for every ounce he weighs.)

It's been a great contest—with more entries than ever before—from feed customers and from feed dealers. Judging from the entries it has helped to generate a lot more interest in high level feeds.

You'll be reading about the 4th Annual Contest later. In the meantime, the finals of the third will show what a whale of an event Pfizer's Livestock Judging Contests have already become!

ek (Monday, Nov. 28)

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See list of contest winners next page

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THESE CONTESTANTS WILL COMPETE FOR GRAND PRIZES AT THE FINALS

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HOG CONTEST

Mr. William T. Harrell, Bath, South Dakota
Mrs. Joanne L. Judd, Lanesboro, Minnesota
Mr. Marvin D. Wolters, Aldora, Iowa

POULTRY CONTEST

Mr. Walter E. Newton Jr., R.D. #7, New Albany, Pennsylvania
Mr. Roy D. Sargeant, Box E, Wheeler, Texas
Mr. Melvin Thome, R.R.1, Hawarden, Iowa

DAIRY CONTEST

Mr. Ralph H. Romig, R.R. #3, Perryville, Missouri
Mrs. Frank Schanelle, Rural Route 1, Herbine, Nebraska
Mr. Joe T. Geddie, Route 7, Cleveland, Tennessee

TOP JUNIORS

HOG CONTEST

Miss Mary K. Kearney, R.F.D., Clutier, Iowa
Mr. Eldon R. Stuthman, Route #4, Wisner, Nebraska
Mr. Luther D. Van Soggren, Wisner, Nebraska

POULTRY CONTEST

Mr. George A. Peterson, c/o Clinton High School, Clinton, Wisconsin
Mr. George M. Wolfe, R.R. 1, Box #51, Troy Center, Wisconsin
Mr. David M. Wright, 236 Parker St., East Meadow, Massachusetts

DAIRY CONTEST

Robert William Walther, Clinton High School, Clinton, Wisconsin
Mr. Don Morton, R.R. 5, Lebanon, Indiana
Mr. Charles Proszimba, Route 4, Little Falls, Minnesota

OTHER PRIZE WINNERS

SENIOR HOG CONTEST

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Cressie Garson, Jr., 207 Magnolia Drive, Huntsville

ARIZONA
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Mr. Robert B. Johnson, 107 Kickapoo Street, Hartford City, Indiana
Mr. Cecil Wilhelm, 751 East Tipton, Huntington, Indiana
Mr. Dean W. Lockhard, Liberty Center, Indiana
Mr. Glen McDaniel, Box #842, Marion, Indiana
Mr. Glen White, 167 South Main Street, Montpelier, Indiana
Mr. John Finch, Box #614, Portland, Indiana
Mr. Norman H. Beckman, Route 1, Seymour, Indiana
Mr. Lowell Foster, R.R. 1, Spiceland, Indiana
Mr. R. L. Batemore, Upland, Indiana
Mr. Dobert Leadenon, Urbana, Indiana
Mr. Paul Hooky, Hi-Quality Hatchery, Warren, Indiana
Mr. Wayne Mason, Hoosier Grain & Supply Co., Tudor, Indiana

IOWA
Mr. William Kent, Alvord Produce, Alvord, Iowa
Mr. Leo Freeman, Ashton Farm Store, Ashton, Iowa
Mr. Ross D. Gipple, Bridgewater, Iowa
Mr. Lowell Wilke, Fayette, Iowa
Mr. Red Stoll, Stoll Implement & Feed, Galva, Iowa
Mr. Carl S. Trimblein, Guttenberg, Iowa
Mr. George M. Waters, 423 Second Ave. S.W., Hampton, Iowa
Mr. Ernst A. Feucht, Lester, Iowa
Mr. Le Roy Hoedt, Little Rock, Iowa
Mr. Irvin M. Kruger, c. o Kruse Brothers Electric, Little Rock, Iowa
Mr. Alfred Kruse, Little Rock, Iowa
Mr. Myron A. Hoff, First Place, River Sioux, Iowa
Mrs. Lavon Ann Klossman, 304 Third Ave., Rock Rapids, Iowa
Mr. Henry Thoma, 1716 Fifteenth Street, Rock Valley, Iowa
Mr. M. E. Rodemeyer, Sheffield, Iowa
Mr. Elmer D. Fritzel, Box #375, Wellsburg, Iowa

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Mr. Russell Jenkins Jr., Jennings, Kansas
Mr. Paul Bogar, 310 Thornton, Mountridge, Kansas

KENTUCKY
Mr. Charles D. Vanston, Pike Street, Louisa, Kentucky

MARYLAND
Mrs. C. Merrick Wilson, Centreville, Maryland
Mrs. Le Roy Merriken, Box #46 R. F. D. 2, Fedderalsburg, Maryland
Mr. Howard Dunn, c. o Wm. J. Hines & Son, Silver Spring, Maryland
Mr. Charles A. Miller, Miller's General Store, Taneytown, Maryland

MINNESOTA
Mr. Ivan Krugmier, Caledonia, Minnesota
Mr. Sigfard A. Nelson, R.R. 1, Lushing, Minnesota
Mr. Harold Schultz, R.F. 1, Fairfax, Minnesota
Mr. Charles R. Greer, Fertile, Minnesota
Mr. Leo J. Goodman, Freeport, Minnesota
Mr. Henry Mikelson, Hills, Minnesota
Mr. Pete Hollander, Kenyonmus, Minnesota
Mr. Leonard R. Green, Kensington, Minnesota
Mr. Percy E. Tabor, Route 4, Long Prairie, Minnesota
Mr. George W. Edmonds, Luverne, Minnesota
Mr. Edwin Ackerman, Owatonna, Minnesota
Mr. Albert Roogeveen, Vesta, Minnesota

MISSISSIPPI
Mr. Travis Toomer, P.O. Box #112, Fulton, Mississippi
Mr. Raymond I. Hurst, Marion, Mississippi

**MISS

Farmers' Realized Net Income in Third Quarter Drops 5% From Second Quarter

WASHINGTON—Farmers' realized net income in the third quarter of 1955 was at an annual rate of approximately $10.3 billion. This was about 5% less than the second quarter rate and 10% below the rate in the third quarter of 1954. These facts are contained in the U.S. Department of Agriculture report on the farm income situation.

The number of farms in the U.S. has declined approximately 2½% a year since 1950.

The decline in realized net income—and a similar decline in net income of farm operators which includes the value of inventory change—was due primarily to lower prices of farm products accompanied by only a small reduction in expenses, the report says. Prices received by farmers averaged 4% lower in the third quarter of 1955 than in the second quarter, and 5% lower than in the third quarter of 1954. Marketings were about the same except for seasonal changes.

Farmers' cash receipts from marketings in the first three quarters of 1955 (January-September) are estimated by USDA at $19.7 billion. This total includes $11.7 billion from livestock and livestock products and $8 billion from crops. Total livestock receipts were down 5%, mainly because prices of hogs averaged nearly 30% lower.

Dairy receipts totaled nearly the same as a year earlier, and receipts from poultry and eggs were up slightly. Total crop receipts were off only 3% from last year as declines for wheat and cotton were partly offset by increases for soybeans, tobacco and vegetables.

Farmers' cash receipts through September this year have been lower than last year in every month except April, which showed a 4% increase. This increase was due to earlier deliveries of wheat and rice under the Purchase Agreement Program, and also to a much higher average price for potatoes than in April of last year.

July-September production expenses totaled only a little below the previous quarter and the third quarter of 1954. Prices paid by farmers for production items, including interest, taxes and wage rates, were 2% less than in the second quarter and less than 1% under the third quarter level of last year.

Most of the decline in prices paid by farmers for production items was due to lower prices paid for feed, seed and livestock, the USDA says. Interest, taxes, farm wage rates and a number of manufactured items were somewhat higher than a year ago.

DISASTROUS TEXAS FIRE

PLAINVIEW, TEXAS — Fire swept through two grain buildings of the West-Tex Grain Co. causing a total loss of the structures. Damage ran about $150,000. A half million bushels of grain stored in the two buildings was also damaged.

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Assured Abbott Safety

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NEW! BROWER Junior Creep Feeder

- For the individual farrowing pen — gets pigs on high potency rations early.
- Takes care of litter of 10 pigs.
- Holds 16 lbs. creep starter.
- Can be used as grit box for poultry.

No. 1CF — Made of rust-resisting Armco Zincgrip. Designed to prevent feed waste. Width 12½", depth 6½", height 14¼", Height trough edge 2½". Shipped set-up. Weight 6 lbs.

Write for details and low dealer prices.

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Whitmoyer PRODUCTS OF SCIENTIFIC MERIT OFFER YOU EXTRA PROFITS

Investigate today. Write to Dept. F.

WHITMOYER LABORATORIES, Inc.

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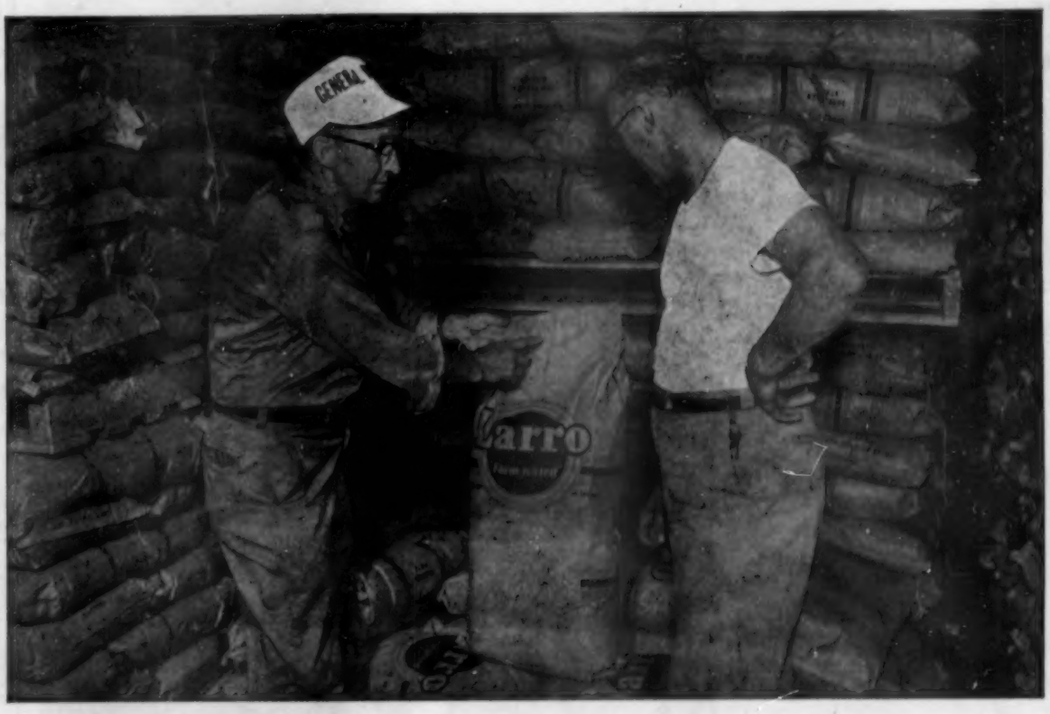
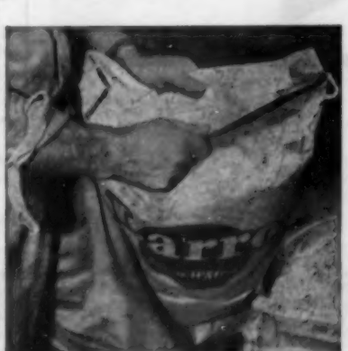


General Mills uses feed bags sewn with Super Cordura rayon for greater strength...lower cost

REG. U. S. PAT. OFF.



Strong, uniform thread of "Super Cordura" gives sewn ends extra strength—yet makes bags easier to open. And the cost is less than ordinary threads.

Now... the extra strength of Du Pont "Super Cordura"* high tenacity rayon makes possible more efficient sewing for multi-wall bags. The Feed Division of General Mills, for example, has found that sewing thread of "Super Cordura" gives bag ends greater strength than those sewn with conventional threads... and the cost is lower!

What's more, "Super Cordura" helps give General Mills a more efficient bag-closing operation. That's because the Du Pont yarn is treated with a special lubricant finish to insure good sewability. The extra strength of this thread reduces breaks during sewing... permits the use of smaller needles. The smaller holes mean minimum loss from sifting. Because of the extra strength of "Super Cordura," one size yarn replaces several conventional sizes. This means greater savings in lower thread inventory.

Consider the advantages of bags sewn with Du Pont "Super Cordura" the next time you place an order for multi-walls ... and use "Super Cordura" in closing your own filled bags.

E. I. DU PONT DE NEMOURS & CO. (INC.)
Textile Fibers Dept., Wilmington 98, Delaware

*Du Pont's registered trade-mark for its high tenacity rayon yarns.

Advantages of "SUPER CORDURA" thread for bag sewing

- Lower cost
- Greater strength
- Improved sewability
- Reduced thread inventory
- Uniform properties

DU PONT "Super Cordura"

HIGH TENACITY RAYON

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

An Advertising Idea

Milt Peters had just finished mixing a batch of feed for a farmer and had swept up after the farmer left. Now he stood in the open area of the loading platform soaking up the warm fall sun for a few minutes.

"Oh, Pop," he called suddenly, "I wonder why Joe is pacing off an area there in the parking lot near the road."

Pop Henley, the grey-haired veteran employee, came forward slowly and peered through his glasses. "I wouldn't know," he said disinterestedly. "I don't try to keep track of everything other men do. I've got enough ideas of my own to ride herd on."

"Well, he's figuring on something," Milt said, showing his penchant for finding out about things. "That's about the third time he's paced off an area. I'll bet he's figuring on putting something on that big parking lot. If you ask me, Joe made a mistake having this mill and store so far back from the road."

Pop Henley snorted. "He didn't build this place. He bought it from somebody else years ago. Besides a big parking lot is a good thing nowadays. And Joe's got some signs near the highway so folks can't miss seeing the place and knowing what we sell."

When Joe came back to the mill, he went directly into his office and immediately there issued forth a lot of smoke from an old corncob pipe.

"Joe's got an idea, all right," commented Milt. "He's smoking that old corncob again."

A few minutes later Rusty Hagen, the runt-sized, dark-haired wiry bookkeeper came out, and ambled over to the loading platform. "Whew, this fresh air smells good," he said. "I almost passed out when Joe got that old corncob going. He's working furiously."

"Somebody ought to throw that pipe away when Joe isn't looking," Milt offered. "I'll bet it drives a lot of customers away. But you can't tell him that."

No Pipe—No Ideas

"He always goes for it when he's working up an idea," Pop Henley said wisely. "If you throw that pipe away then maybe Joe won't get any more ideas. Men are funny that way."

Milt looked quite surprised. "Say, I never thought of that, Pop. Gee, you're a wise old bird."

"Oh, I just keep my eyes open," Pop grumbled. "You young squirts got a lot to learn about life yet."

Milt smiled. "Maybe about some things, but others—no."

"That'll be enough," Pop growled. "Let's not talk about redheads today. Here comes a grinding customer. Let's get busy."

Later in the day, Joe came out into the salesroom and motioned his employees together. They had time to listen, because there was a temporary lull in business.

"Take a look at this picture of a big hen, built for display purposes at the Poultry and Egg Festival, Vineland, N.J.," Joe said enthusiastically. "Isn't it striking?"

The employees looked and saw a large picture of a white hen, with copy saying it was built of wood and was 16 ft. high and 26 ft. long.

"Yeah, that's a dandy," said Butterball Barlow, the youngish, fat employee. "Looks like they've got shredded paper glued to the outside, or something like that. The hen sure looks very natural with that red comb."

"Red's my favorite color," Milt said, tongue in cheek.

"Stop that," Pop thundered. "No talk about redheads today."

"Pop, you're a kill-joy," Milt said. "I'm glad I don't listen to you about what I do after working hours."

Hen for a Highway Display

"I've been thinking," Joe went on seriously, "about the idea of building a hen like this and placing it on our parking lot near the highway. It sure would attract a lot of attention."

"Oh, as a sort of billboard, eh?" asked Smiley Johnson.

"More than that," declared Joe. "Of course, there could be a sign atop the hen advertising our quality feed and equipment, but I would also put in some big display windows on both sides of the hen. Then we could show a lot of poultry feed and equipment night and day in all kinds of weather."

Smiley Johnson chuckled. "Gee,

FILE and REMEMBER
Here in thumbnail style are a few of the many feed processing and related units available from FORSTER. FORSTER offers the *best* in hammermills, mixers, blenders, etc. . . . from a single unit to a turn-key plant. Send today for more complete data on these units—or on any other equipment for feed production and grain handling. File this data to use in *your* remodeling and expansion plans.
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The FORSTER MFG. CO.
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WICHITA 12, KANSAS

that's quite a display idea, Joe. It's an extension of the idea we used last year, where we put a standard feed display on a truck and hauled it out by the road every day."

"Yes, that idea worked during good weather, but we had no protection from rain or snow," Joe said. "This hen display would instantly identify us as a mill that sells poultry feed and supplies. The hen would be lighted inside and outside at night, until midnight, and then we could really capitalize on night traffic, too."

No Display Like It

Pop Henley's ruddy face beamed. It was seldom that Pop showed enthusiasm for a merchandising idea, but this one evidently pleased him. "We'd be the only feed firm in this area with that sort of display," he said. "Farmers sure wouldn't miss our place on an advertising deal like this, Joe."

"Another good feature would be the retail store display right out in the parking lot," said Butterball. "Farmers' wives sitting in their cars while hubby gets grain ground and mixed, would have something to look at, and they might buy some extra poultry supplies."

"Why not put the hen house on skids?" said Milt Peters. "Then we could move it around the lot very easily when we want to. And we could even take it to the county fair that way."

"Swell," exclaimed Joe. "I'm glad you boys like the idea. Now I'll have Alex, the carpenter, build the framework and some of us can help him in spare time with the rough work. That will cut down the cost. I sure hope that display hen makes a lot of extra sales for us and wins some new customers."

SELLS FEED BUSINESS

WHAT CHEER, IOWA — Bernard Stanley has sold his feed and produce business here to Omer Traut.

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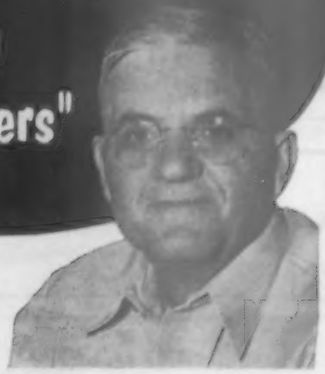
Methionine-supplementation

When the ticker lists a good buy for broiler and turkey feeds —remember that methionine-supplementation gives you wider formula latitude. You can adjust formulas to take advantage of current prices. In high-energy feeds, proteins supplemented with methionine are better utilized as building blocks. You have greater versatility in choice of high-energy ingredients of relative nutritive value. You can lower formulation costs without lowering feed quality because added methionine *balances* any variation in natural methionine when you use feed ingredients interchangeably. That is why many feed mixers include methionine-supplement in all registrations of broiler and turkey feed formulas. We shall be glad to furnish your nutritional adviser with complete information. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.

you can depend on DOW AGRICULTURAL CHEMICALS DOW

"Our Brower Mixer paid for itself in 6 months ...brings in new customers"



. . . says F. H. BIRDEN
Albuquerque Feed Store
Albuquerque, New Mexico

"We have used your 2,000 lb. mixer for over 10 years and it is still in excellent operating condition. Our Brower Mixer paid for itself the first six months and helped bring in many new customers. We have found the Brower Mixer to be fast, dependable and thorough. We are well pleased with its performance and recommend it to anybody who is contemplating buying a mixer."

BROWER
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FEED MIXERS

The dependability, fast mixing action and low cost operation of Brower Mixers have made them the favorite of feed dealers everywhere. A perfect blend mixed in approx. 10 minutes—at a power cost from 3¢ to 5¢ per ton. Above-and-below-floor models. Five sizes—mixing capacities of 700, 1,200, 2,000, 3,000 and 4,000 lb. per batch. Heavy welded steel construction. Gives years of trouble-free service. Many exclusive features.

30 DAY TRIAL

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BROWER MANUFACTURING CO.
402 N 3rd St. - Quincy, Ill.

World's Largest Selling Mixer!

25% Capacity Operation for Elevator Called Unprofitable

MANHATTAN, KANSAS — Many elevators will be in financial trouble, if they are forced to operate at, say 25% of capacity, Dr. John McCoy, agricultural economist, told an audience present at a Kansas State College experiment station luncheon here.

Dr. McCoy, who recently completed a research contract for Kansas State with the Agricultural Marketing Service of the U.S. Department of Agriculture, found costs of storing wheat in large farm bins, in large country elevators, or in terminal storage facilities to be about the same when all were used at one half capacity. That cost is from 11 to 13¢ a bushel a year. And that is about what the Commodity Credit Corp. is currently paying for storage on its supplies of wheat. However, when used to only ¼ capacity, costs go to 20 to 23¢ a bushel—considerably more than the government pays.

It would cost between 6 and 7¢ a bushel a year to store wheat in terminal elevators of 2 million to 6 million bushels capacity, if their storage space could be fully used all the time. When ¾ the space is used, the cost is 8 to 10¢ a bushel. Using only ⅓ the space makes it 11 to 13¢ a bushel, while using only ¼ their storage capacity makes costs go up to 20 to 23¢ a bushel a year.

In general, costs of storage become cheaper in farm and country elevator storage faciliites as the facilities become larger, Dr. McCoy's research indicated. However, costs are determined much more on how fully storage facilities are used than the size of the facilities.

For example, cost of storage in a 200,000-bu. country elevator to full capacity would be 9¢ a bushel; at ½ full the cost would be 15¢ a bushel; at ¼ full, it would be 27¢ a bushel.

In contrast to those steeply increasing costs of using storage at less than capacity, costs increased only about 2¢ a bushel from full use of 1,000-bu. bins to full use of 25,000-bu. bins.

Done for the USDA, the research by Dr. McCoy was for a public storage program; however, he feels that results could be used as a guide by farmers and elevator operators for normal operations.

50 Attend Cincinnati Feed Club Meeting

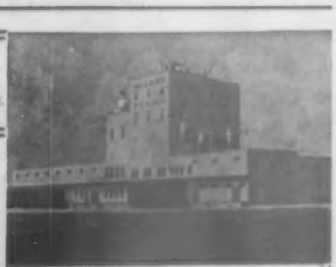
CINCINNATI—About 50 members and guests of the Cincinnati Feed Club, at a monthly dinner meeting Nov. 7 in Hotel Netherland Plaza, heard a discussion of present conditions in the Philippines by James Marks of Miami University. The talk was illustrated with colored slides of photographs taken by Mr. Marks while with the U.S. Air Force in the islands.

New members introduced at the meeting were R. M. Gatti, Richardson Scale Co.; Jack Van Lieshout, Western Condensing Co., and Frank D. Varga, Amburgo Co. Visitors included Fred C. Yoder, Dayton, Ohio, representing Hot Spot Detector, Inc., Des Moines, Iowa, and several from local firms.

FLORIDA LABORATORIES

TALLAHASSEE, FLA.—The Florida State Legislature's interim committee on poultry has selected Callahan as the northeast Florida site for the establishment in the near future of poultry diagnostic laboratory. Other laboratories will be built in Jackson County and Dade County.

McCabe Grain Co., Ltd. Winnipeg, Canada



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STABILIDE

reduces iodine loss

STABILIDE®—potassium iodide *stabilized* with calcium stearate—is designed to iodize feed, salt and calcium carbonate mixtures. Try STABILIDE. It may solve your problem of iodine loss in storage.

Scientists at the Mellon Institute found that "an iodized livestock mineral containing 0.21% stearate-coated potassium iodide lost 0.5% of the original iodine content during two months, while an unstabilized mineral containing the same ingredients lost 14% of the iodine content."*

STABILIDE
REDUCES RATE OF IODINE LOSS
EASY TO MIX THOROUGHLY
FREE FLOWING

Write today to your nearest Mallinckrodt office for samples, prices and complete literature.

Other Mallinckrodt iodizing mixtures are Ioflow®, Iomag®, and Iodide Mixture.

*"Stabilization of Iodine in Salt and Foodstuffs" by F. F. Johnson and E. R. Frederick, SCIENCE, Oct. 4, 1946, Vol. 98, PP315-316.

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Poultry and Egg Marketing Regulatory Developments in Various States Listed

New legislative and regulatory developments affecting the production and marketing of poultry and eggs are reported from a number of state capitals throughout the U.S. Here are some of the recent developments.

ALABAMA: Rejected by the Alabama Legislature prior to adjournment of its 1955 session was a bill proposing a $150,000 conditional appropriation for a poultry processing plant in Walker County. Opposition came from the Alabama Poultry Industry Assn. which urged defeat of the bill on the grounds that the plant, if needed, could be built by private industry.

Illinois: Stillman J. Stanard, state agriculture director, announced the hiring of six full-time field men to step up enforcement of the Illinois Egg Law. The act requires that buyers candle eggs and remove bad ones, that bad or inedible eggs cannot be sold or bought as human food, that eggs must be labeled at retail according to uniform standards either by "grade and size" or as "ungraded."

The measure also requires that all egg advertising show grade and size or "ungraded," that the word "fresh" and similar terms can be used only if eggs are Grade A or better, and that proper candling certificates and dealers invoices must accompany all eggs at wholesale. Quality standards set up under the act are identical to federal standards.

Indiana: A set of rules for retailing eggs, effective Feb. 1, 1956, was recently adopted by the Indiana State Egg Board following a public hearing in the Purdue Extension Center, Indianapolis.

The new rules will require that retailers show the size and grade of eggs on all egg packages. Also, advertising must identify clearly the size and quality of eggs offered for retail sale, if the price is quoted.

Citing increased public confidence in value of Indiana eggs as a goal, C. B. Van Nuys, board president, said, "Since the egg law was enacted in 1941, Purdue poultry experts estimate that Indiana egg consumption has more than doubled due to customer confidence in quality. This is another step to increase such confidence."

Opposed to the new rules were the Indiana Grocers & Meat Dealers Assn., representing independent retailers.

There is no change in classifications —Grade A, B and C indicate freshness of the eggs. Sizes are jumbo, extra large, large, medium, small and peewee.

As before, grocers may continue to buy eggs from farmers. But, if resale to customers is made, then the grading and size designations must be made. Sale of eggs on the farms are not involved in the rules.

In another development, an ordinance to license poultry dealers as a sanitary safeguard was ordered drafted by the Marion County Health & Hospital Board. Modeled after a suggested law distributed by the U.S. Public Health Service, the proposed county ordinance would set up strict sanitary practices and licenses could be revoked for cause.

Iowa: Dismissal of a suit challenging the constitutionality of Iowa's new egg grading law was ordered by the State Supreme Court. Enacted by

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- ALL PURPOSE FLAVOR
- ANISE COMPOUND FLAVOR, LIQUID
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ALL PURPOSE FLAVOR

A powerful flavor of high palatability value that imparts a sales-provoking aroma. A natural flavor especially created for formula, mineral and medicated feeds. Available in dry powder or liquid (Oil or Water Soluble).

Write or phone for price list and samples.

Taste Engineering, Inc.

Paul Q. Card, Technical Director
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Simplifies Fortification . . .
Cuts Production Costs . . .
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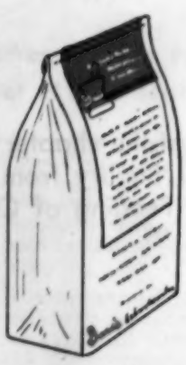
Dawe's PRESCRIPTION SERVICE

Buying your vitamins, trace minerals and antibiotics premixed by Dawe's Prescription Service eliminates the errors and losses caused by unskilled labor handling costly materials in minute amounts. Yet, you pay for ingredients only. Think of the convenience and savings!

Handy batch-size bags simplify final mixing—assure accuracy. Just add a bag of your special premix to each batch of feed, that's all. Easy to handle, easy to use. More savings! More convenience!



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Real savings on feed fortification operations are available to your company through Dawe's Prescription Service. This valuable service enables you to buy your vitamins, trace minerals and antibiotics *custom-blended* to your own prescription and *custom-packed* to meet your own requirements. And it can easily cost you much less than what you are now doing!

Dawe's, the pioneer of multiple vitamin fortification, is your best source of custom blends. As the world's oldest and largest specialists in vitamin products for feeds, and as basic producers of both vitamins and antibiotics, Dawe's offers you the widest selection of ingredients and the most complete service, including helpful cooperation with your own nutrition department.

Any combination of vitamins, trace minerals and antibiotic are available through Dawe's Prescription Service. Your company can save money and increase efficiency through this time-tested service. Send the coupon now. There is no obligation.

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Behind all Lime Crest Trace-Mineral Pre-Mixes stands a record of providing the best possible products with true economy and convenience for the feed manufacturer. Lime Crest pioneered in the use of compatible ingredients in trace-mineral pre-mixes. Its exclusive blending process assures uniformity of distribution of the vital trace elements.

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Write for a free reprint of the chapter on Energy Values of Feedstuffs for Poultry from the 1955 edition of The Scientific Feeding of Chickens by Dr. Harry W. Titus.

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the 1955 Iowa legislature, the new law requires grading of all eggs when purchased for retail from the producer, and when sold at retail. It further requires licensing of egg dealers, retailers, graders and candlers.

With the court test out of the way, the State Agriculture Department was expected to renew its request to the State Legislative Budget & Financial Control Committee for a supplementary appropriation for enforcement of the law. The committee earlier deferred action on the department's request for $37,000 pending outcome of the court test.

Although the department expected to collect some $90,000 in license fees under the new act, this money goes into the state general fund, under the law, and not to the department. The legislature gave the department no increase in appropriations for enforcement of the egg law. Enforcement has been assumed as a temporary duty by the department's 22 dairy and food inspectors.

Kentucky: Reporting on a poultry study made at the request of the Kentucky Legislature, the State Legislative Research Commission said that health authorities estimate that 85% of poultry processed in Kentucky receives no thorough inspection.

The research agency said the reason for lack of adequate inspection was that when legislation was first passed on the subject most poultry was killed at home. In contrast with the poultry situation, the report said, only 10 to 13% of the annual commercial cattle and hog slaughter in Kentucky is sold without inspection.

The commission said little provision is made by law in Kentucky for inspection of poultry carcasses and plant facilities. "It may be desirable ultimately," it added, "to establish compulsory meat inspection."

Nebraska: Ed Hoyt, state agriculture director, announced that Nebraska's new egg grading law has been going into operation smoothly and with very little non-compliance. The act, which went into effect Sept. 18, provides that all eggs sold at retail must be of "B" grade or better, and all eggs for sale must be kept at a temperature no higher than 60°.

North Carolina: Arrangements for a system of voluntary inspection of poultry processing were completed by the North Carolina State Board of Agriculture in a move regarded by some poultry industry leaders as essential if North Carolina plants were to maintain their metropolitan markets in other states.

A set of rules and regulations setting up technical standards and a plan of operation for the inspection program, which will be optional with individual plants, were adopted by the board after detailed discussion.

The poultry inspection program will be under supervision of the state veterinarian, who is authorized to appoint qualified veterinarians as plant supervisors to be in charge of inspection of the processing lines. Plant supervisors will be assisted by lay inspectors.

All inspection costs at the local level will be borne by the plants signing up for inspection service. Payments will be made to the State Department of Agriculture.

Although some of the inspection routine is spelled out in the new regulations, many of the standards established are taken from the federal poultry inspection code. Federal poultry inspection is now available on a voluntary basis, but the expenses involved are regarded as too high for

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"Well satisfied with 'Stilbosol' and counting on it in the future"

. . says Harry H. Biehl, Rushville, Indiana

Lilly 'Stilbosol' builds more beef at less cost...

Another cattle feeder who is "sold" on supplements fortified with 'Stilbosol' is Harry H. Biehl of Rushville, Indiana. He, too, reports bigger, faster and cheaper feedlot gains. In addition, both he and his packer-buyer were pleased with the dressing percent and carcass quality of his 'Stilbosol'-fed cattle.

Mr. Biehl brought 56 common steers of mixed breeding in from the stalk fields December 28, 1954, and put them on a full feed including 2 pounds of protein with 'Stilbosol' daily.

These cattle went into his feedlot weighing an average of 800 pounds and Mr. Biehl topped them out as they reached market finish. They were on full feed an average of 81 days and during this period gained 251 pounds each for an average of 3.1 pounds per steer daily. Final weight averaged 1051 pounds.

Mr. Biehl sold his first load of 17 steers for $23.50 and checked slaughterhouse records to determine carcass value and dressing percentage. The 'Stilbosol'-fed cattle graded low-choice and dressed out 59½ percent. The quality of cattle he feeds usually dressed out about 57 or 58 percent in past years, according to Mr. Biehl's records. Both he and the packer were pleased with the increased quality and dress-out.

Mr. Biehl reported his cost of gain at 21½¢ a pound—less than he'd expected this year. To the question about feeding 'Stilbosol' in the future, Mr. Biehl says, "You bet I will!"

'Stilbosol' is the biggest development for the cattle feeding industry in years. Beef-fattening supplements fortified with 'Stilbosol' are helping cattle feeders get *more* beef at *less* cost.

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix, Lilly. 'Stilbosol' is the only such premix compounded under license from the Iowa State College Research Foundation, Inc.

Stilbosol
(Diethylstilbestrol Premix, Lilly)
Lilly

ELI LILLY AND COMPANY, AGRICULTURAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

most North Carolina processing plants.

Virginia: Decision not to ask the state for continuance during the 1956-58 biennium of the $5,000 subsidy it has been receiving was reached by the Virginia State Poultry Federation at the concluding session of its annual meeting in Richmond.

The group thus became the second of eight agricultural associations to decide to get off the roll of state subsidies. The Virginia State Horticultural Society announced in September it would no longer request its biennial $6,790 state subsidy.

Montana Nutrition Conference Planned

BOZEMAN, MONT.—The seventh annual Montana Nutrition Conference will be held June 11-12 at Montana State College. The conference is sponsored by the college, the Montana Feed Manufacturers & Dealers Assn. and the Nutrition Council of the American Feed Manufacturers Assn.

Dr. O. O. Thomas of the college's animal industry department, is chairman of the conference.

Two city fellows who worked with each other every day decided to go to the North woods for their vacation and live like woodsmen.

Before the vacation rolled around, they read all the ads and bought all the things they thought they'd need. Finally, they got up among the big trees in real wild country.

Joe was so eager to try wildlife he unpacked his gun and told Bill to get a fire ready, he was going out to shoot a bear.

He raised his rifle and shot. When the smoke cleared, the bear was rushing toward him. Joe dropped his gun and ran. He ran through the front door and out the back—and as he went through the living room he yelled to Bill, "Okay, pal, you skin this one and I'll go for another."

◆ ◆ ◆

Isn't there any perfume on the market with a name that would appeal to a nice gal?

◆ ◆ ◆

World's most glaringly prominent object: A blonde's hair on the coat lapel of a dark suit observed by a brunette wife.

◆ ◆ ◆

A foreign correspondent was interviewing a workman in Warsaw. "Are you for the present regime?" he inquired.

"I sure am," the worker promptly replied. "I'm one of the happiest people in the world. I've a large apartment, a separate bathroom, as much fuel and electricity as I can use, my own radio . . ."

"Really? You have a radio?" said the newspaperman in surprise.

"Why, of course!" said the worker. "How else could I possibly know that I have a large apartment, a separate bathroom, electricity and plenty of heat? How else would I know that I belong to the happiest people on earth?"

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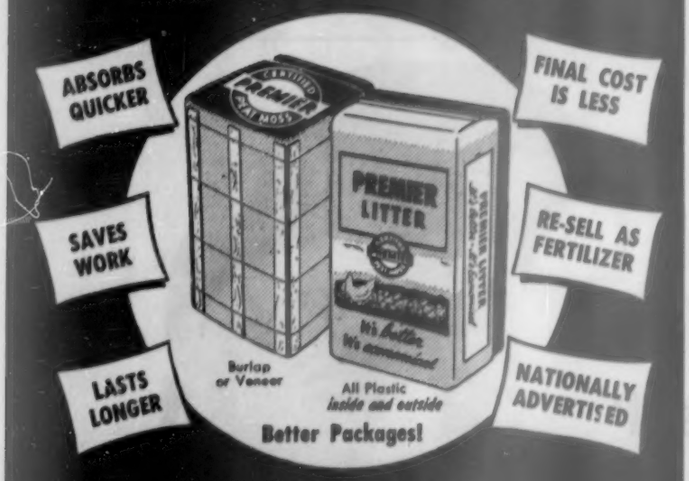

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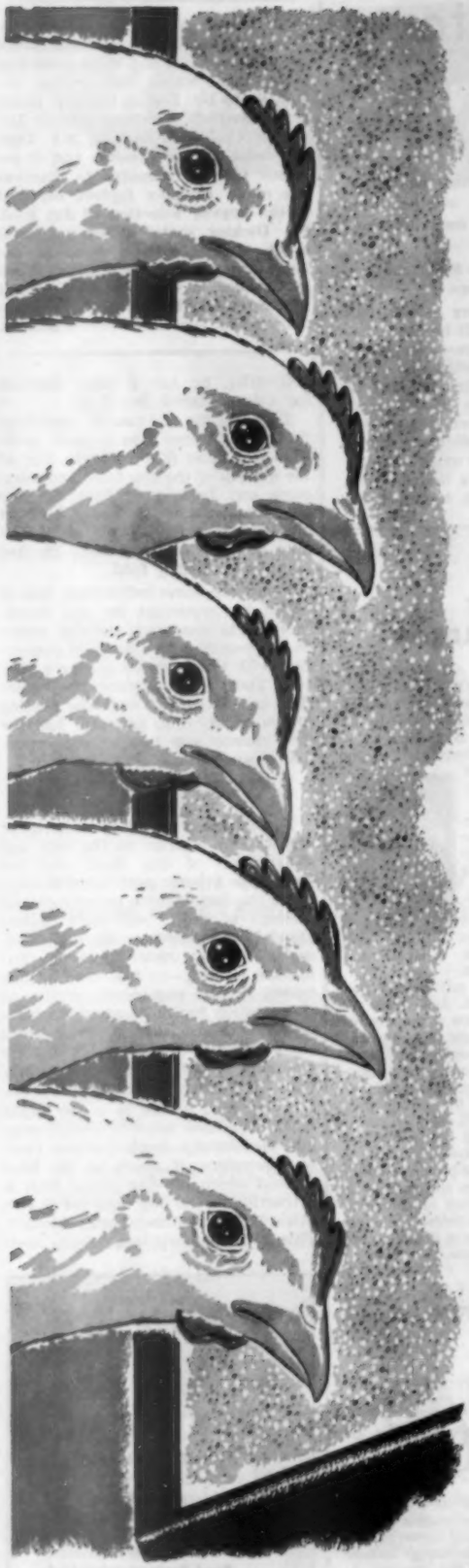

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In high energy broiler mashes, certain feed ingredients which were important sources of vitamins are now being excluded because of their low productive energy. This increases the responsibility of nutritional supplements to supply the needs of the animals.

Nopcosol M-9 has been developed for just this purpose. It contains all of the supplementary nutrients necessary to produce top-notch broilers with today's high energy feeds. It is a truly modern supplement providing generous levels of the newer factors, such as vitamin E, vitamin K, arsanilic acid, and methionine. The nutrient levels in Nopcosol M-9 have been established to provide optimal growth and feed efficiency.

Nopcosol M-9, like the other great Nopcosol formulas, is packaged in 10-lb batch-sized bags, the quantity needed to fortify a ton of feed. It is completely dispersed and readily digested—the most convenient and profitable supplement for the medium-sized mixer. A folder giving full information is yours on request. Just fill in and mail the coupon.

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What Motivates the Dog Owner to Pick a Certain Type of Dog Food

By Dr. Ernest Dichter

EDITOR'S NOTE: An ideal situation for dog food manufacturers might be one in which dogs could buy the product which they prefer, according to Dr. Ernest Dichter, president, Institute for Motivational Research, Croton-on-Hudson, N.Y. This, of course, is not possible and it remains for the industry to discover the many complex factors involved in the buyers' selection of dog food. Dr. Dichter spoke before members of the Dog Food Division of the American Feed Manufacturers Assn. in Chicago on the subject of "What Motivates the Dog Owner." A summary of Dr. Dichter's address follows.

I sometimes have the feeling that dog food manufacturers would regard as their ideal world, one in which they could sell their carefully prepared products directly to dogs. Under these circumstances the rational, friendly puppy could pick his food on the basis of what he likes in relation to its taste, its color, its smell and any other doggy appeals which he might establish for himself. Instead, however, in selling dog food in our real, everyday world, we must deal with the irrational, emotional, illogical factors which result in the necessity to translate into advertising and sales appeals the complex emotional relationship of the feelings of a dog owner toward his animal, and the criteria which this dog owner establishes as being the best for his dog.

Dog owners seem to fall into three different categories. There are those who treat their dogs like animals—barely accepted, tolerated and fed whatever is left over around the house. Then, there are those who treat the dog as a member of the family, almost as a child—here the tendency is to feed the dog on baby food — lamb chops, delicacies most appealing to the human palate. The third, and perhaps most important group from the point of view of dog food sales, are those who treat their dogs like dogs, whether they be pets, or working dogs, or show dogs.

Dog Owner Wants Emotional Reassurance

Although dog owners are not all alike, they virtually all have a common problem. They are never really sure that they are doing the right thing by their pet. This is particularly true in the area of dog food. At the time the dog owner faces this problem, he has a conflict—he wants to feed the dog in the most convenient and least expensive manner possible. At the same time, to add to his difficulties, he has a basic distrust for manufactured dog foods.

To reach the dog owner, therefore, the manufacturer has several problems. He must first reassure him of the quality of the dog food, and overcome any basic prejudices he may have against them. Secondly, he must eliminate the feelings of guilt that may be attached to feeding his dog manufactured dog food.

There are some indications that it might be important for the manufacturer to encourage the dog owner to use manufactured foods in connection with the foods he prepares himself. Thus, you reassure the owner that he has control over the feeding habits of his dog, and still has the convenience and inexpensiveness he also desires.

Owners Think Dogs Almost Human

It may seem simple to state these varieties in relation to the sale and distribution of dog food, and yet they pose a basic problem. To overcome the dog owner's reluctance and feelings of guilt, you must understand his own feelings about his animal. The dog owner tends to humanize his dog—to feel that he has tastes, desires and moods similar to those which the dog owner has himself. Therefore, when he examines the food he is to feed to his dog, he examines it with a human eye, thinking of it in terms of the dog's needs.

A dog food which, to a dog might look, taste and smell delicious, may not successfully reach the dog owner. Therefore, it must be the kind of food which the dog owner feels is attractive to the dog, and yet is still attractive to the dog owner himself. This anthropomorphism reflects itself

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Today, low-cost production of molasses-enriched feeds is a must for profit-wise custom millers.

The simple, sure way to add molasses to premixed feeds without heating is with the high-speed Sprout-Waldron Customix. It is a complete package unit especially designed for the custom miller. The direct-connected agitator assures production of lump-free, high-quality feed. Customix actually forces the molasses into the fiber and structure of the feed at the correct percentage. No balling.

Usually furnished complete with motor-driven pump and strainer; and gauges, valves, and meter all piped up and mounted right on the unit. Also usually furnished is an inclined screw feeder to feed the Customix from vertical mixers. Installation is inexpensive.

For larger mills, the Sprout-Waldron Deluxe Coldmix makes molasses mixing a more profitable operation. This high-speed unit is furnished with all necessary accessory equipment. Available in capacities of from 7 to 20 tons per hour.

Ask your SPROUT-WALDRON MAN or write for complete details.

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You get many *plus* values when you deal with your SPROUT-WALDRON MAN. He has America's most complete line of feed milling equipment. In molasses mixers, as well as other mixers, he offers such a wide choice of styles and sizes that he can be unbiased in his recommendations.

Lynn Skinner

You also get on-the-spot guidance in the selection of the exact equipment to fit your needs.

Your SPROUT-WALDRON MAN is thoroughly trained to solve your problems. He's practical, sincere, and anxious to help you increase your profits year after year. And, being one of a team, he has access to the accumulated experience of the entire Sprout-Waldron sales and engineering staff.

Before appointment as a Sprout-Waldron sales engineer, Lynn Skinner, shown above, served the milling trade as salesman for a mill supply house in Memphis. As are all Sprout-Waldron salesmen, Lynn is extremely active in solving the particular problems of the area in which he lives and works—for example, the utilization of cottonseed oil waste products in feeds. With such men to help you, you're bound to buy *right* at Sprout-Waldron.

SPROUT-WALDRON *LARGE* DOUBLE AGITATOR

Double agitator mixers are usually preferred by the largest feed manufacturers for high capacities. In this large unit, two slow-speed agitators with adjustable paddles make up the mixing and conveying element. Their housing has trough bottoms that can be dropped for cleaning. In such mixers, the molasses is usually heated. Available in many different sizes with capacities up to 60 tons per hour.

SPROUT-WALDRON *SMALL* DOUBLE AGITATOR

This compact mixer (26 in. x 6 ft.) is designed particularly for the custom mixing of feeds such as crimped oats, flaked grains, etc. that might be unsuitable for the action of high-speed mixers. Furnished on a supporting frame, equipped with a two-way bagger and drop bottoms for easy cleaning. Molasses control equipment, pumps, and inclined screw feeders available.

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8 new tests by leading colleges . . .

. . . show how

DRIED WHEY

in the ration jumped profits an average of $51.94 per thousand birds

Read the facts as shown by these impartial feeding trials. See the difference dried whey can make in your feed.

DRIED whey is a profit booster in broiler rations — for the company that makes them and for the grower who feeds them. This is shown by results of eight recent college feeding trials.

On these experiments, 2½% to 3% dried whey was added to otherwise well-fortified rations. Whey-fed birds gained an average of 0.39 lb. more per bird in 10-week periods and delivered an average of $51.94 more income over feed cost per thousand broilers.

Typical results are shown by the tables at right. Note in the first table how feed conversion improved from 2.68 to 2.60 when 2½% dried whey was added; how weights increased 0.24 lb. per bird; and how profits jumped from $273.75 per thousand broilers to $306.93.

What's more, DRIED WHEY increased income $20.44 per thousand birds when the basal ration already was fortified with fish solubles.

Whey gives these extra benefits because it supplies a powerful, unidentified nutrient. This factor works with other ingredients to speed growth, improve feed efficiency and increase appetite appeal of the ration.

Write for complete details on these college feeding results and for full information on Peebles' spray-dried whey. It's a high-quality product — uniform from season to season and available the year around

TREATMENT	AVE. 8½ WK. WT. (LBS.)	FEED GAIN
None	2.36	2.68
2.5% Dried Whey	2.60	2.60
2% Fish Solubles	2.59	2.59
2.5% DW & 2% FS	2.77	2.56

Dried whey at 2½% level improves feed conversion and profit over feed cost, with or without other unidentified factor carriers in the ration.

EXTRA FEEDING BENEFITS FROM 2½% DRIED WHEY

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$590.00	$316.25	$273.75
2.5% DW	650.00	343.07	306.93
2.5% FS	647.50	337.09	310.42
2.5% DW & 2.5% FS	692.50	361.64	330.86

Per 1,000 birds

Dried whey at 3% level, either alone or in combination with fish factor carrier, increases profit over feed cost.

TREATMENT	AVE. 10 WK. WT. (LBS.)	FEED GAIN
None	2.216	3.13
3% Dried Whey	2.795	2.88
3% Fish Solubles	2.812	2.79
3% DW & 3% FS	2.993	2.81

Cost of basal ration figured at $5.00 cwt. Dried whey calculated on a corn replacement basis; fish solubles and distillers dried solubles on replacement of some corn and some soybean oil meal. Broiler price at 25¢ per pound.

EXTRA FEEDING BENEFITS FROM 3% DRIED WHEY

TREATMENT	INCOME	FEED COST	INCOME OVER FEED COST
Basal	$554.00	$346.80	$207.20
3% DW	698.75	409.75	289.00
3% FS	703.00	395.44	307.56
3% DW & 3% FS	748.25	431.43	316.82

Per 1,000 birds

NOW! We're selling the "dried whey in broiler feeds story" for you in these broiler publications across the country Broiler Growing, Eastern Breeder and Broiler Grower, Broiler World, Georgia Poultry Times and Broiler Journal

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in many ways. It reflects itself in the feelings of the dog owner that the dog prefers one food to another. It reflects itself in his feelings that the best food he can feed his animal is the food he prepares himself, and is similar to the food he eats himself. To attract a dog owner to your product, you must appeal to this important psychological aspect, by developing this understanding, both in the manufacture of your product, and in your approach in advertising.

Understand His Problems

By promoting the nutritional value of your product, you indicate that you have an understanding of what the dog needs. By failing to include in your advertisements the emotional impact—the picture of the relationship between dog and master—you fail to reach the dog owner at his most vulnerable level.

The dog owner wants to be told that he is doing the best for his dog, and that your dog food will help him do better. He wants to be told that you understand how he feels about the dog, that you understand the dependent relationship that the dog has toward him. You must indicate understanding of his feelings of responsibility toward the animal. You must also show that you realize he has conflicting needs—the need to feed his dog the best and the need to do it inexpensively. You must offer him useful, expert advice.

In all these ways in your advertising, in your promotion, you must create a picture of a company whose concern is with establishing and maintaining a continuing and valuable relationship between itself and the dog owner.

Product With a Personality

None of the points which are made above are static. They must be looked at dynamically within the entire framework of the personality of your company and your products. What we are saying is that the dog owner will not choose your product on a rational basis alone, but on the basis of the total personality picture which he has of your brand and company. It is this total personality which will give you a distinctive, believable brand differential on the market, which will provide the basis for increased sales. What these personality attributes are, or should be, will differ from company to company. The point is, that whatever the specific characteristics are, the dog owner must have the general impression that he is dealing with a company which is concerned with the welfare of dogs in general, and his dog in particular, and will help him do the best by his pet.

RECOVERS FROM ILLNESS

NEEDHAM, MASS.—John McCoy of Grandone, Inc., Needham, Mass., has returned to work after being hospitalized and spending several weeks recuperating at home. Mr. McCoy, who resides in Greenfield, Mass., is a sales and service representative for the Grandone firm, distributor for Whitmoyer Laboratories, Inc., Myerstown, Pa.

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Hammond Multi-Wall Bags . . . shipping sacks of highest quality . . . are produced in three modernly equipped, strategically located plants. Our sales representatives, with offices in 11 principal cities, have a thorough understanding of your packaging problems and are at your service at all times. Why not call in the one nearest you today, from the list below. Let us show you what Hammond's quality and service can mean to you.

For Multi-Wall bags, "Make it a Habit to Depend on Hammond"

HAMMOND BAG & PAPER COMPANY, INC.
General Offices: Wellsburg, W. Va.

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The ideal merchandising product for speedy turnover. Packed in plastic-lined bags for safe storage — convenient handling. Consistently top quality. Large stocks available for quick deliveries.

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CPM
CALIFORNIA PELLET MILLS

IF YOUR FEED SALES ARE FALLING OFF... AND YOUR BANK BALANCE SHRINKING...

It's Time To Change To Staley's!

A few feed dealers (like WORRISOME WILLIE, the little guy above) wring their hands and blame the market when sales shrink down to runt size. We can't change the market, but we can help change feed sales trends from *down* to *up*.

Now, I don't say we've got a cure-all to end all feed dealers' headaches. But I do know Staley's has the best deal for feed dealers ever to come down the pike.

I'm talking about Staley's 3-Point Profit System—a new and different way of selling that makes a feed business jump instead of slump.

We've already helped a lot of dealers who changed over to Staley's when competitors began to take over their best customers with cut prices and low quality feeds.

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BACITRACIN A

Fight secondary invaders—stimulate appetites with high-level antibiotic feeds

High-level antibiotic feeds owe their enormous value to two factors. First, is their proved ability to fight off the dangerous secondary bacteria. It is never the job of a high-level feed to directly attack or cure primary virus infections. But the secondary invaders cause a high percentage of the economic loss suffered by the livestock grower and it is these secondary invaders that high-level feeds fight off.

The second factor is the ability of these feeds to stimulate appetites. By stimulating appetites, as well as killing the secondary invaders, a high-level feed enables livestock to combat more successfully diseases such as blue comb, infectious sinusitis, non-specific enteritis, air sac and infectious swine enteritis.

The true measure of antibiotic effectiveness is selective activity

Big game hunters say that a cheetah, on the prowl, selects as his prey one animal from a herd, and ignoring all others, pursues that one until he brings it down. In a similar way, antibiotics attack and kill specific harmful bacterial organisms, without injuring beneficial bacteria or retarding the proper development of body tissue.

This fact becomes important when you realize that most of the bacteria that surround us are beneficial or neutral. Relatively few are disease-producing.

Remember this when you measure the value of an antibiotic – a wide range of activity with poor selectivity is harmful when it destroys beneficial organisms. Antiseptics and disinfectants have the widest range of activity but are not used in feeds because they have no selectivity. They kill the living cells of the host animal as well as all the bacteria with which they come in contact.

Some antibiotics are more selective than others in their action. Bacitracin, for example, is highly active in killing most of the dangerous secondary invaders. These are the bacteria that follow diseases of the respiratory and intestinal tracts. Secondary invaders are the real culprits in the poultry house or hog pen. At the same time, bacitracin stimulates appetites, promotes growth of vitamin-producing intestinal organisms.

Don't wait—it pays to use high-level feeds at the first sign of trouble

Livestock will get the maximum benefit from a high-level feed if they receive it at the very first sign of stress, disease, or other conditions which lower natural resistance, reduce appetite, slow down weight gains or egg production.

Any program of high-level feeding should be preceded by correct diagnosis and then conscientiously pursued with the right remedy.

For best results, a high-level feed should be used promptly in order to fight off secondary invaders, stimulate appetites and hasten recovery.

CIFERM

NTIBIOTIC FERMENTATION SUPPLEMENTS

1 ECONOMICAL

...saves $3 to $9 per ton of feed

Bacitracin, penicillin, and tetracycline-type antibiotics used at high levels all show equal results on a gram for gram basis. But only BACIFERM gives you maximum performance and cuts fortification costs at least 30%. That means a saving of $3 to $9 per ton of high-level feed whenever you use a BACIFERM bacitracin antibiotic supplement.

2 EXTRA VALUE

...furnishes bonus vitamins

All BACIFERM antibiotic supplements are whole fermentation products. Each contains *selectively-active* bacitracin *plus* naturally-produced B-vitamins, high protein, vitamin K, and unidentified – but known to be present – growth factors.

During disease or stress periods, the extra vitamins in a BACIFERM high-level feed are quite important. BACIFERM stimulates the animal to eat more and bolsters the ration with extra vitamins. This helps assure intake of the required amounts of nutrients essential to disease resistance, tissue repair and rapid growth.

BACIFERM contains these desirable bonus factors and, in addition, costs 30% less than other antibiotic supplements, none of which have all these extra values. For example, forty pounds of BACIFERM-5, enough to fortify a ton of feed with 200 grams of bacitracin, adds the following average bonus quantities:

Riboflavin	2,000.0 mg.	Niacin	3,000.0 mg.
Vitamin B_{12}	3.2 mg.	Para Amino Benzoic Acid	564.0 mg.
Choline	41,000.0 mg.	Vitamin K	1,120.0 mg.
Folic Acid	228.0 mg.		
Pantothenic Acid	5,160.0 mg.		

plus unidentified growth factors high protein (35-40%)

3 EFFECTIVE

...for poultry and swine

Results show that BACIFERM is unexcelled in effectiveness – even by higher-priced antibiotics. On farm after farm, bacitracin has controlled secondary infections, and effectively treated conditions associated with blue comb, nonspecific enteritis, infectious sinusitis, air-sac disease and infectious swine enteritis.

BACIFERM stimulates appetites, keeps animals eating when disease or other stress conditions occur. BACIFERM, a bacitracin antibiotic supplement, gets more poultry and swine to market *faster*, because it hastens recovery and reduces mortality.

PERFORMANCE PROVED ON FARM AFTER FARM

CRD Symptoms Subside Promptly . . . In Mississippi, symptoms of CRD were observed in a flock of 8,500 broilers 6 weeks old. Sneezing and sniffling, some open-mouth breathing, and a dry rattle were noted. BACIFERM was added to the feed for three days at a level of 185 grams of bacitracin per ton and the birds never went off feed or appeared to be set back in any way. Symptoms subsided promptly and did not reappear.

BROILERS!

Marked Improvement in 18 Hours . . . In California, hexamitiasis was diagnosed in a flock of turkeys, 10 weeks old. A competitive antibiotic was fed at extreme high levels for 28 days, with disappointing results. Then BACIFERM, with its bonus vitamins, was added to the feed at a similar level. Marked improvement was noted in 18 hours—enteritis was no longer observed, feed consumption rose rapidly, mortality dropped to levels which are usual in healthy flocks, and the birds were bright and normally active. When the treatment was discontinued, there was no recurrence.

TURKEYS!

Speedy Recovery from "Black" Scours . . . In Indiana, "black" scours hit 207 late spring pigs running in clover pasture. Within a very few days, 22 were dead and about 50 more were in bad shape. A BACIFERM supplement was fed at a level of 1½ pounds per 100 pounds of feed (200 grams of antibiotic per ton). To speed recovery, some BACIFERM was also slurried in the drinking water to get at the pigs who wouldn't eat. The pigs steadily improved, ate more feed, and became more active; their hair became slick and all other signs of health returned.

HOGS!

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BACIFERM-10 Contains 10 grams bacitracin per lb.

PENBAC® Combination of 5 grams bacitracin plus 1 gram penicillin per lb.

PENBAC-X Combination of 5 grams bacitracin plus 2 grams penicillin per lb.

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Dry Milk Production Up from Year Ago

WASHINGTON — Combined production of dry skim milk and dry buttermilk for animal feed for the first three quarters of the year (January-September) totaled 46,200,000 lb., 1% higher than in the same period in 1954, according to a report from the U.S. Department of Agriculture.

Dry buttermilk output in September totaled 4,200,000 lb., up 19% from a year earlier and 27% from the 1949-53 average. Production of dry skim milk in September totaled 1,025,000 lb., an increase of 4% from a year earlier but a decline of 18% from the average. The combined January-September production totaled 13,535,000 lb., 14% below the corresponding months of 1954, the USDA report shows.

Stocks of dry skim milk for animal feed held by manufacturers on Sept. 30 totaled 1,096,000 lb., down 13% and 59% respectively, from a year earlier and average. Dry buttermilk stocks totaled 4,090,000 lb., an increase of 4% from a year earlier but a decline of 56% from the 1949-53 average for that date, the USDA estimates.

Selling prices of dry skim milk for feed in September averaged 10.2¢ lb., down slightly from the preceding month, although up 0.9¢ from a year earlier. Combining both human food and animal feed, the price of dry buttermilk averaged 13.61¢ lb., up one third cent from the previous month and 2.1¢ from September, 1954.

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Group Asks About Elevator's Role in Discount Program

WASHINGTON—The U.S. Department of Agriculture program to discount "undesirable varieties" of wheat in the 1956 loan program will not change the responsibility of the country warehouseman, according to the Grain & Feed Dealers National Assn.

The association reported recently that questions have been put to USDA officials in Washington, "and there is no indication that the country warehouseman's responsibility will be any different than in the past—he will still receive wheat for CCC on the basis of grade. He apparently will not be required to bin any discount-wheat apart from other varieties of the same class and grade. In fact, he will not know which lot of CCC-loan wheat has been subject to the discount."

The association said that its information is that farmers desiring loans will certify to the county committee whether their wheat is a desirable or undesirable variety in terms of the USDA designations. False statement would make the person subject to government penalties. But once the certificates are made, there seems to be no plan to follow the wheat into commerce and maintain its identity.

"Our concern," the association reported, "has been as to the possible responsibility of the warehouseman in the identification and separation of varieties."

J. ROBERT EDDINGTON DIES

FEDERALSBURG, MD. — J. Robert Eddington, 64, a Delmarva broiler and chick grower and a former associate with his late father in the feed and milling business, died recently. He lived at Federalsburg, Md.

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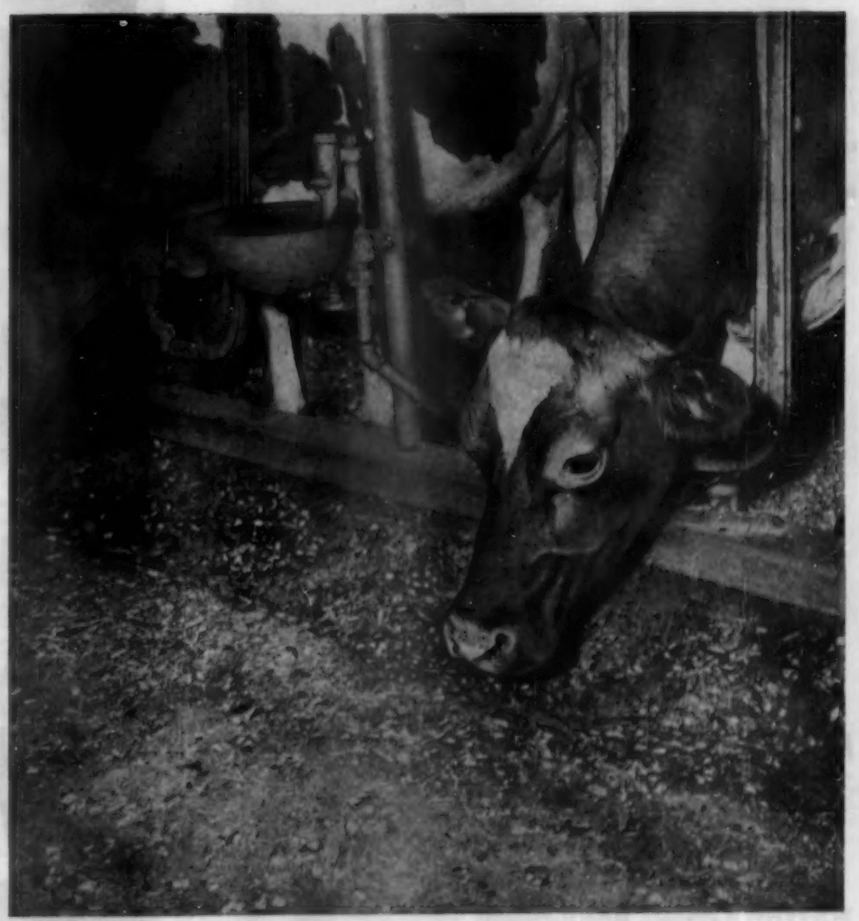

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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

Supplementing Roughages For Dairy Cows

By Dr. George H. Wise

Profitable supplementation of roughages for dairy cattle becomes more complex as the inherited productive capacity of cows increases and as the sources, the kinds and the processing of feeds change. Consideration of these variables in conjunction with the rapidly-growing knowledge of ruminant nutrition exposes the fact that the simple commonplace rule-of-the-thumb procedure is inadequate as a guide for supplementation. The problem of supplementing roughages to obtain optimum returns presents a vital challenge to the dairyman, the feed manufacturer, the researcher and the various educational agencies in the nutrition field.

Decisive judgment in providing supplements necessitates critical appraisal of several factors, including, first, the amounts and kinds of nutrients needed by the cow; second, the nutrients supplied by the roughages

EDITOR'S NOTE: The problem of supplementing roughages for dairy cattle to obtain optimum returns presents a vital challenge to dairymen, feed manufacturers and nutrition researchers, according to Dr. George H. Wise, head of the animal nutrition section of North Carolina State College, Raleigh. In the accompanying article, Dr. Wise thoroughly examines many aspects of the supplement problem. He calls attention to the challenging opportunity for the feed man to "design" the proper concentrate for the roughage available. This article is the text of a talk he gave at the recent Animal Nutrition Conference at the University of Kentucky.

in the diet, and third, the kinds and amounts of supplements needed to complete the nutritive needs.

Nutritive Needs of the Dairy Cow

Kinds of nutrients needed—Physiologically the kinds of nutrients (proteins, carbohydrates, fats, minerals and vitamins) essential for ruminants presumably are the same as needed by other livestock, but dietarially the needs are less critical than for the simple-stomach animal. This difference is due primarily to the converting ability of the microbial inhabitants of the fore compartments (rumen and reticulum) of the stomach.

The ability of the microoragnisms to synthesize amino acids and vitamins of the B-complex minimizes dietary needs for these nutrients to the extent that they are not regarded in practical formulation of rations for cattle, if good roughage is fed. Experimentally, however, much work is being directed toward ascertaining what nutritional factors affect the synthesizing capacity of the microbe population in the ruminant stomach. Hence, it is possible that current investigations may define ruminant needs to a degree that quality of protein and variety of vitamins of the B-classification will be considered in compounding dairy rations in the future.

Cattle are able, through the breakdown assistance of microorganisms, to utilize a variety of carbohydrates, ranging from the complex celluloses to the simple sugars, for energy, but there is no evidence that the ruminant has a specific need for any one kind of carbohydrate. It is recognized, however, that microorganisms of the rumen need readily available energy, which may be supplied effectively by starches (in cereal grains) and by sugars (abundant in mo-

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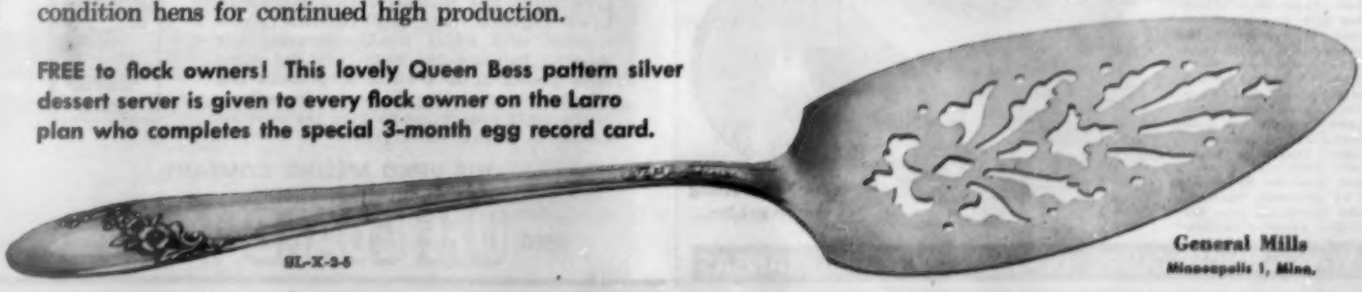

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lasses), for the aforementioned synthetic processes. Fragments of the carbohydrates also are essential for the utilization of the non-protein nitrogen, such as urea.

Fats provide a concentrated source of energy, approximately 2.25 times that of either carbohydrates or proteins. Investigations at Cornell indicated that some fat is essential in the diet of the dairy cow for optimum milk production (Cornell Agr. Expt. Sta. Memoir, 265, 1944).

The kinds of fats fed also may affect the amount and the properties of fat in milk. For example, feeding cod liver oil reduces the concentration of fat in milk (Jour. Dairy Sci., 15:283, 1932), and the ingestion of corn oil increases the degree of unsaturation of butterfat (Jour. Dairy Sci., 15:209, 1932). Workers at the University of Illinois (Hoard's Dairyman, Sept. 25, 1955) have demonstrated that dairy cows can use as much as 2 lb. of stabilized animal fat per head daily to replace energy supplied by other feeds. The animal fats did not affect the properties of the milk fat perceptibly.

Minerals play an indispensable role in the nutrition of dairy cows. In practical supplementation, only calcium, phosphorus, sodium, chlorine, cobalt, copper and iodine need to be considered. Except under extreme circumstances, the remainder of the essential minerals are present in adequate amounts in feeds normally consumed by dairy cows.

Synthesis within the ruminant normally provides all needed vitamins except A, D and E. Of these, A presents the major problem.

Amounts of nutrients needed—The amounts of the various nutrients needed depend on the size of the cow and her productivity. As a guide in compounding rations, feeding standards, which are quantitative approximations of the needs of the animals, are used. Nutrient allowances recommended for dairy cattle, in the U.S., are presented in "Feeds and Feeding" and in "Recommended Nutrient Allowances for Dairy Cattle." Much additional research is needed to gain information on the specific nutritive requirements of dairy cows in various stages of production if optimum efficiency is to be achieved.

Supplying the Nutrients Needed

The problem of the dairyman is to supply the cow with the sum of nutrients that are needed for profitable performance. The foundation feed that he generally uses is good quality home-grown roughages. The supplementary feeds are concentrates, usually a mixture of grains and oil meals, fortified with whatever minerals and vitamins that may be deemed desirable.

Roughages as the primary source of nutrients in the dairy ration—Profitable dairy production in the present era of grassland farming is based on efficient utilization of roughages. This class of feeds is characterized by the presence of relatively high "crude fiber" and considerable non-protein nitrogen. Thus, in effective utilization of roughages the crude fiber must be broken down to supply energy and the non-protein nitrogen must be built up to form proteins. In addition to energy and protein, roughages are the primary source of the needed dietary vitamins, particularly vitamin A activity as provided by carotene. Roughages, especially good quality legumes, also provide generous amounts of needed minerals,

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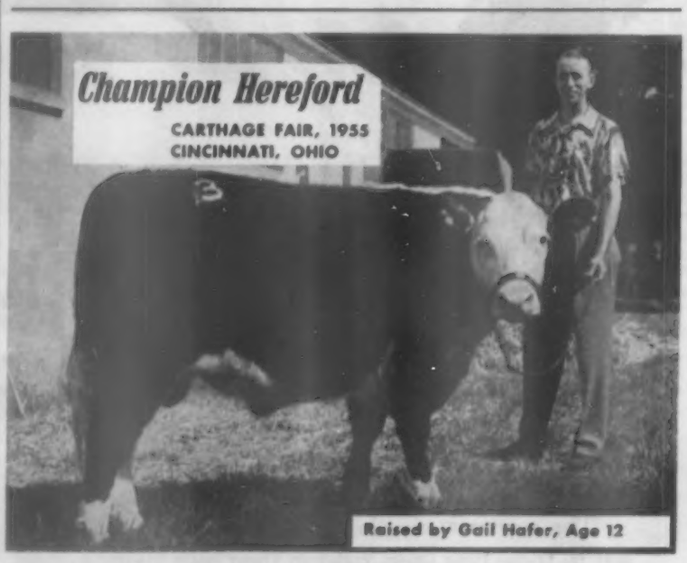

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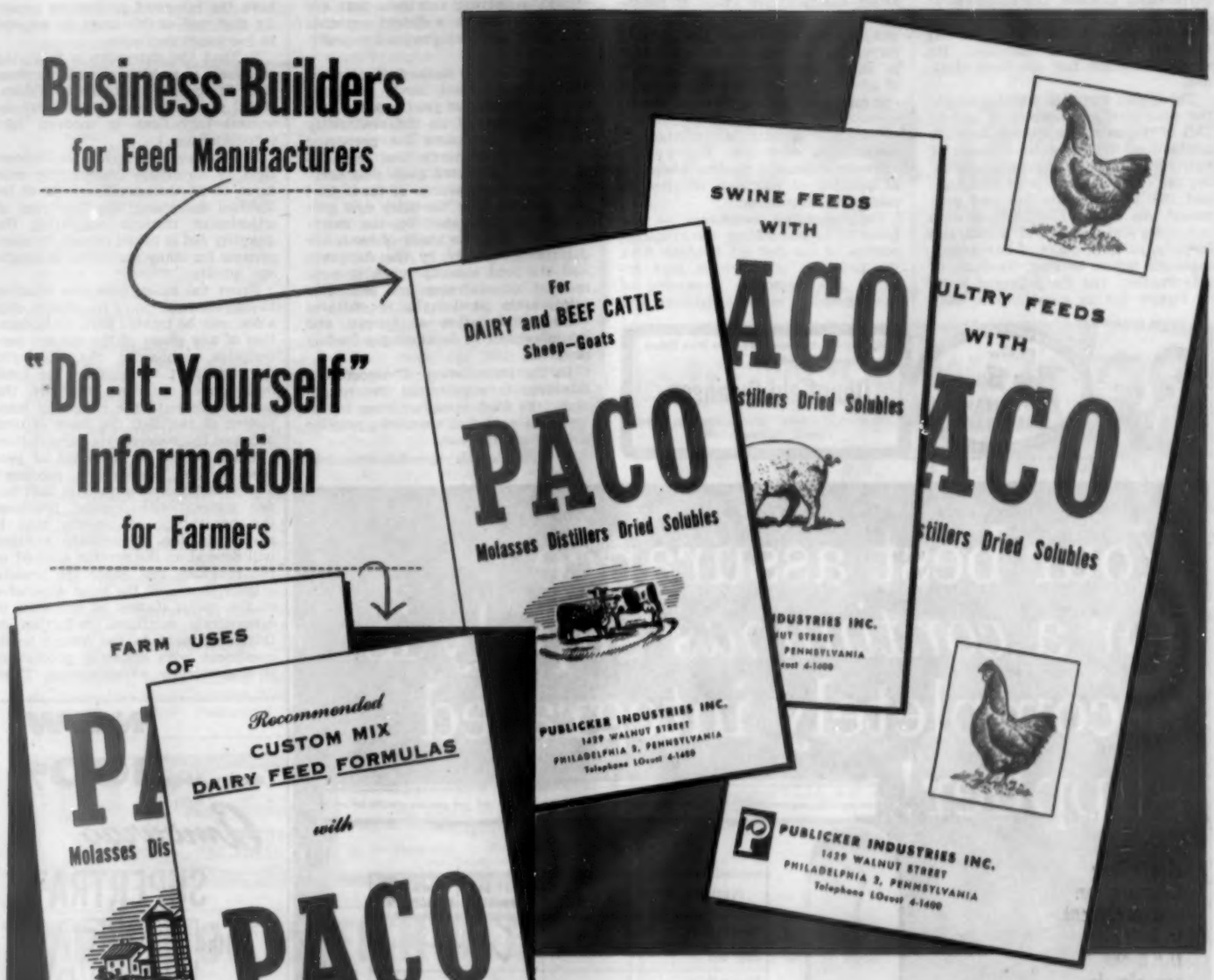

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particularly calcium. The bulkiness of roughages is a physical characteristic that also seems to have an important role in dairy cattle nutrition. Its specific function has not been clarified.

Though in the U.S. roughages are the source of an average of almost 75% of the nutrients utilized for milk production, the range in amounts of nutrients supplied is extreme, depending on (a) the quality of roughage and (b) the amounts fed and consumed. An array of conditions, such as species and varieties of plants, soil fertility, rainfall, stage of harvesting, exposure before storing, methods of preservation, and the different kinds of forage fed in combination, may affect the nutritive value of roughages.

Although only high quality pastures, hay and silages are advocated in dairy feeding, oftentimes periods of adversity necessitate utilization of low-grade roughages, such as stover, corncobs and straw. This marked variation in quality of roughages in conjunction with wide ranges in amounts consumed renders prediction of quantity of nutrients supplied by roughages impossible.

Supplementing roughages — The goals in supplementing the roughage portion of the diet are twofold: first, the provision of nutrients that enhance the microbial processing of raw materials in the roughages and, second, supplying nutrients that are not obtainable in sufficient amounts and kinds from roughages for profitable production.

In view of the marked uncertainty about the nutrient needs of cattle and the variety of feed supplies and feeding practices on different dairy farms, the prospects for preparing concentrate mixtures that would reach the two listed goals may seem hopeless. The amounts of feeds that will be offered to the dairy cow generally are regulated by the dairyman; whereas the kinds of feeds are determined jointly by the dairymen and the feed manufacturer, if commercial concentrates are fed. This relationship obviously necessitates close collaboration of farmer and manufacturer in developing a feeding program.

In the formulation of concentrate mixtures to supplement the roughages, the feed manufacturing industry must accept as a working premise several assumptions:

1. That the dairyman has cows that have the inherited productive capacity that will enable them to respond to increased nutrients.

2. That the dairyman is following as closely as possible acceptable practices in modern husbandry. (Educational service is an essential supplemental ingredient in modern feed merchandising.)

3. That even though it is impractical to formulate concentrate mixtures to fit the specific needs of individual dairymen, the spectrum of adjustment through regulating the quantity fed is broad enough to compensate for many variations in roughage quality.

From the many problems relating to supplementation of roughages, only a few may be treated here. Consideration of any phase of the subject necessitates emphazing the axiomatic principle that the goal is the total nutrition of the cow; therefore, the more inadequate the roughage component of the diet, the more critical becomes the concentrate formulation.

What should be the level of proteins in the concentrate mixture? The time-honored answer is that under conventional feeding practices the percentage of protein that is needed in the concentrate mixture will depend on the protein content of the roughage fed. Since the protein usually is one of the most expensive of the major classes of nutrients in concentrate mixtures, reduction of this component to the lowest levels consistent with optimum production is economically advantageous. Thus,

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the higher the protein is in the roughage, the lower the recommended level in the concentrate, Table 1.

Table 1—Protein Levels Generally Recommended for Concentrate Mixtures That Are to Be Fed With Various Kinds of Roughages

Roughage:	Percentage of protein in concentrate mixture
Legumes, hays and silages	12–14
Legume hay with grass or corn silage	14–16
Mixed (legume and grass) hays and silages	14–16
Mixed hay and non-legume silage	16
Grass hay and non-legume silage	16–18
Poor grade roughages (stover, straw, cottonseed hulls)	20–24
Young succulent pasture forage	13
Pasture advancing in maturity	14–18

These graduated levels of proteins are better adapted to a cured and preserved roughage (hays and silages) feeding regime than to pastures. In the spring the young succulent actively growing plants are rich in protein. At this stage of growth, a low-protein high-energy concentrate mixture is needed. But as the grazing season advances, the amount of forage tends to decrease and the percentage of protein in the plants decline. The hazard in recommending the feeding of low-protein concentrate mixtures during the early grazing is the likely failure of the dairyman to take cognizance of subsequent changes in the pasture forage and to adjust his concentrate supplementation accordingly.

Nutritionists of the Ralston Purina Co. (Nutrition News Bulletin, Vol. 3, No. 2, 1947) have challenged the validity of the practice of varying the percentages of protein in concentrate mixtures to adjust for differences in amounts of protein in roughages. They emphasized that "as the quality of roughage becomes poorer, the cow is depending upon the concentrate not that quality of roughage, amount consumed (palatability), protein content and net energy values are closely related. For stored roughages all these properties usually show a high degree of correlation, but for young rapidly growing pasture forage energy is more likely to be deficient than is protein.

Extensive studies at the Ralston Purina Research Farm indicated that under barn-feeding conditions, in which legume hays, grass hays and cottonseed were fed, a concentrate mixture containing 16% protein fed at levels to meet the energy needs of the cows, also fulfilled the protein requirements. The Purina report indicated further that the inclusion of sufficient oil meal to enhance the palatability to the desired degree usually would result in a concentrate mixture that would be approximately 16% protein.

Even though protein would be in excess when good-quality high-protein roughage is fed, the contention is that this is an economical price to pay to insure sufficient energy intakes to meet the energy needs of high producing cows. Thus, a standard 16% concentrate mixture was considered adequate for supplementation of most roughages fed in practical dairy farming.

There are indications that as more

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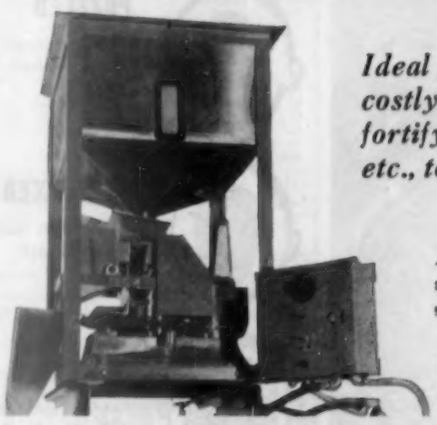

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is discovered about the various nutrient needs of the dairy cow and, thereby, the possibilities of a "balanced ration" approach reality, the amounts of protein in concentrate mixtures may be reduced. Work in the U.S. Department of Agriculture (BDI-Inf-160, 1953) indicated that the protein content of concentrate mixtures may be reduced 3 or 4 percentage points lower than that generally recommended.

Problems Presented

The foregoing views indicate that in research as well as in practice the protein supplementation of dairy feeds presents problems that warrant frequent reexamination. Present observations indicate that in meeting the energy as well as the protein requirements of the dairy cow, the needs of proteins in the concentrate rarely exceed the 16% level. The practicality of lower levels depends on the skill, judgment and alertness of the dairyman.

How important is variety of ingredients in the concentrate mixture used to supplement roughages? This question has posed a contentious problem over many years. There seems to be a premium placed on long lists of ingredients incorporated in the concentrate mixture. Nutritionally this view probably is a vestige of the period when a variety of ingredients was considered necessary to supply all dietary essentials. Inasmuch as nutritionists continue to operate in the realm of "unknown factors," the possible nutritional significance of variety cannot be eliminated entirely.

There are several other reasons why a feed manufacturer may be interested in listing a large number of ingredients:

1. Sales appeal—the superlative degree appeals to the U.S. buyer.
2. Expediency in formula changes—registration of a large number of ingredients, even though many be present in only token amounts, permits flexibility in formula adjustments without reregistration.
3. Improvement in palatability.

Comparisons of the use of simple concentrate mixtures with complex mixtures as supplements to roughages have shown negligible differences in productivity. The Bureau of Dairy Industry compared, over an entire lactation period, the milk producing efficiency of "single grains" and of "mixed grains" as supplements to a basal ration of high-quality roughage, alfalfa hay and silage, fed to the extent of appetite (USDA Circ. 696, 1944). All cows had access to bonemeal. The concentrates listed in Table 2 were limited to 1 lb. for each 5.5 lb. of milk produced, thus providing only a small fraction (from 0 to 18%) of the total digestible nutrients needed.

The results showed that when cows have the opportunity to consume as much good legume hay and silage as they like, it makes little difference whether the additional nutrients required are obtained from a single

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grain or a mixture of several grains and plant by-products.

These experiments did not reveal whether or not a difference might have been manifested if the concentrates had supplied a greater portion of the needed nutrients. There also may be some question relative to the fewness of ingredients from sources other than grains.

Another Question

Ohio investigators (Ohio Agric. Expt. Sta. Bimo. Bul. 238, pp. 19-24, 1946) also conducted feeding trials to answer this question: "Assuming that liberal quantities of farily good legume or mixed hay are fed, can a simple, cheap, grain mixture made up of ground corn and soybean oil meal, plus minerals, be fed?"

Table 2—Concentrate Mixtures That Were Compared With Single Grains as Supplements to Good Quality Roughage (USDA)

	Concentrate supplements compared	
	Mixed	Single
Mandan Station		
Barley	1 part	
Flint corn	1 part	
Oats	1 part	Ground barley
Wheat bran	1 part	
Linseed oil meal	1 part	
Hannibal Station		
Ground corn	12 parts	
Crushed oats	9 parts	
Wheat bran	6 parts	
Linseed oil meal	3 parts	Gr. yellow corn
Cottonseed meal	1 part	
Soybean oil meal	2 parts	
Woodward Station		
Kafir	3 parts	
Wheat bran	2 parts	
Cottonseed meal	0.5 part	
Soybean oil meal or	0.5 part	Ground kafir
Ground barley	4 parts	
Ground oats	2 parts	
Ground wheat	3 parts	
Cottonseed meal or Soybean oil meal	2 parts	

Good producing cows, averaging about 40 lb. per day during the two 40-day periods of experimentation, were fed roughage, consisting of legume-mixed hay in quantities as much as the cows cared to eat plus 30 lb. of corn silage daily. The concentrate mixtures shown in Table 3 were fed at the rate of 1 lb. of concentrate per 3⅓ lb. of milk. The maximum, however, was limited to 15 lb. daily.

Table 3—Simple and Complex Mixtures Used in the Ohio Studies

Ingredients:	Complex mixture	Simple mixture
Corn, ground, lb.	400	775
Oats, ground, lb.	200	...
Wheat bran, lb.	150	...
Molasses mixing feed,* lb.	100	...
Linseed oil meal, lb.	50	...
Soybean oil meal (extracted), lb.	75	200
Steamed bone meal, lb.	10	10
Salt, lb.	10	10
Limestone, lb.	5	5
Total, lb.	1,000	1,000
Digestible protein (%)	13.22	12.75
Total digestible nutrients	74.00	77.00

*Molasses mixing feed composed of molasses, 27%; soybean oil meal, 53%, and dried beet pulp, 20%.

There were no significant differences between the mixtures in either consumption or milk production. Though this study was limited to short feeding periods, subsequent investigations in which the simple and the complex were compared by continuous feeding over several lactations yielded results in agreement with the short-time observations.

Simple Mixtures as Good

The accumulated evidence indicates that as long as cows receive liberal amounts of good quality legume hay plus silage, simple grain mixtures fed in sufficient amounts to supply additional energy and protein needed by the cow, will be as productive as complex mixtures. The crux of the problem is the provision of hays, silages and pastures of the high quality desired. Concepts of standards of quality vary widely, depending on personal experience. Periods of adversity render provision of good roughages either impossible or uneconomical. When the burden of the nutrition load shifts from the roughage component of the diet to the concentrate mixture, is there any

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advantage of the complex mixture over the simple?

Dairymen at North Carolina State Agriculture Experiment Station (unpublished data, 1954) compared a simple concentrate mixture with a complex one (Table 4) as a supplement to a poor quality roughage, U.S. No. 2 and 3 timothy hay, fed free choice. The mixtures were fed at the rate of 1 lb. per 3.5 lb. of 4% fat-corrected-milk (FCM).

Table 4—Comparison of Concentrate Mixtures Fed as Supplements to a Low Grade Hay

Simple mixture	lb.	Complex mixture	lb.
Ground corn	1,260	Ground corn	300
		Ground oats	650
Cottonseed meal	700	Wheat bran	460
		Soybean oil meal	100
		Linseed oil meal	100
		Cottonseed meal	100
		Corn gluten feed	150
		Corn dist. dry solubles	100

Each mixture contained 20 lb. of dicalcium phosphate and 20 lb. of iodized salt. Half the cows in each group received a trace mineral supplement.

The average daily milk yields over a 10-week period were 19.8 lb. FCM from the simple mixture and 20.8 lb. FCM from the complex mixture. The difference was not significant statistically. Unfortunately, the levels of milk production were too low, and the duration of the trial was too short to provide a critical test. In the absence of conclusive experimental data on the kinds of concentrate mixtures that may be fed most profitably as supplements to poor quality roughages, the dairymen and the feed manufacturers will continue to be plagued with opinions.

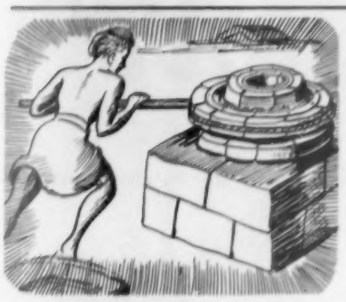
Direct Control Needed

The logical policy to follow in balancing dairy rations is to improve the concentrate mixture as the roughage becomes poorer. Thus, the well-informed feed man engaged in custom grinding and mixing, particularly when the processing is done on the farm, has an opportunity to survey the available roughage, appraise the productivity of the herd and, therefrom, formulate mixtures and recommend feeding programs to effect improvement.

Although the feed manufacturer may merchandise simple mixtures as well as complex, recommendations on which to use may be hazardous unless direct contact can be made with the dairyman.

How much concentrate mixture should be used to supplement roughages? Among the many problems faced by the dairy farmer who is attempting to improve his feed efficiency, one of the most important is that of determining the most economical combinations and levels at which to feed concentrates and roughages to dairy cows. Hoglund (Mich. State College Ag. Econ. Report No. 620, 1955) pointed out that from an economic standpoint, there is no one most profitable level of feeding.

The major factors that determine the optimum ratios of concentrates



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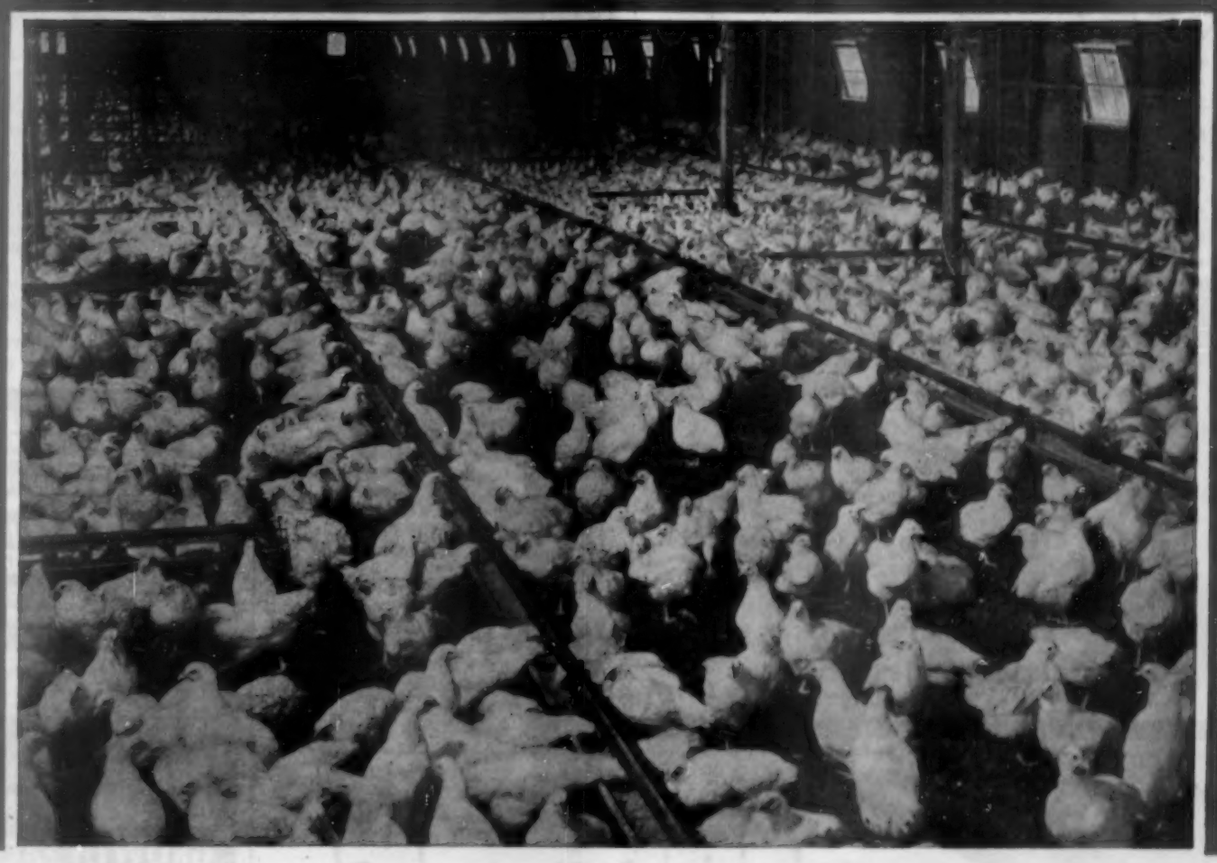

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Modern high-energy broiler feeds require specific vitamin supplementation for maximum performance and economy. Merck Vitamin Mixtures are quality-controlled—an important adjunct to your own quality-control program.

The carriers of Merck Vitamin Mixtures are not by-products, but are field-proved materials, selected through research to provide top performance in feed mill use. An extensive testing program has confirmed the compatibility of Merck feed ingredients with other ingredients normally used in feed formulations.

Merck Vitamin Mixtures are quickly available from convenient shipping points.

NEW FACILITIES AT ST. LOUIS, exclusively devoted to the feed industry, enable Merck to offer supplements in a wide range of specifications to meet your needs. By making Merck—the world's foremost producer of vitamins—your prime source of supply for these products, you are sure of getting the best quality available. You also save time and simplify purchasing.

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MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

Merck & Co., Inc.

In which we wish our

TUXEDO DEALERS

A HAPPY THANKSGIVING

THIS is a bit early for it, but it's become sort of a yearly custom for us to send Thanksgiving Greetings to our Tuxedo Dealers through Feedstuffs each year.

Some folks might think it foolish and sentimental of us to take paid space in a magazine just to say that when we bow our heads next Thursday and give thanks for a good year, we'll also include appreciation for the Tuxedo Dealers who helped make that good year come around the way it did.

Some folks might think that instead of Thanksgiving wishes we ought to be delivering a sales talk about Tuxedo Dairy and Tuxedo Calf Feed because this is the season for it.

Somehow, though, we don't think so. One of the biggest reasons for the growth of our Company, we believe, is the genuine "family" feeling that exists between our dealers and ourselves.

And when the members of your family can't all be together around the table, what do you do? You send 'em a message saying you're thinking about 'em.

HAPPY THANKSGIVING, TUXEDO DEALERS!

THE EARLY & DANIEL COMPANY, CINCINNATI 3, OHIO

TUXEDO FEEDS

FOR LIVESTOCK & POULTRY

Our 74th Year

to roughages are relative cost of nutrients available in concentrates and in roughages; price relationships between feed and milk; the productive capacity of the cows, and the quality of roughages fed.

Though economically all these items are important, nutritionally roughage quality is of primary concern. As shown in Table 5, the poorer the quality of roughage in the diet, the greater is the response in milk production when increased quantities of grain are fed. Good economic judgment and feeding know-how are necessary to determine the most profitable levels to feed.

Table 5—Additional Quantities of Milk Produced When Variable Quantities of Grain and Three Qualities of Roughages Are Fed Good Holstein Cows*

Total grain fed	Additional pounds of milk produced for each 100 lb. of grain fed		
	Excellent roughage	Medium roughage	Poor roughage
0			
500	100	154	171
1,000	88	114	138
1,500	78	96	116
2,000	62	80	100
2,500	52	67	86
3,000	44	56	73
3,500	38	46	62
4,000		38	52
4,500			42
5,000			34

*From report by C. R. Hoglund, Mich. State College Agric. Econ. No. 620, 1955.

Low-Grade Roughages

A discussion of quality of roughages invariably raises the question of whether or not corncobs and other low-grade roughages may be fed profitably for milk production. The answer to this question is not clear-cut, but experimental observations at the Indiana Agricultural Experiment Station (Jour. Dairy Sci., 36: 581, 1953) indicated that a mixture of ground corncobs with one of the "Purdue supplements" did not maintain milk yields of cows producing only 25 to 30 lb. of milk daily so well as did rations containing either alfalfa hay or alfalfa hay and silage.

Similar investigations at the Virginia Agricultural Experiment Station (Jour. Dairy Sci., 36:581, 1953) indicated that for cows averaging between 37 and 41 lb. of 4% fat-corrected milk daily, the replacement of part of the alfalfa-grass hay with corncobs also reduced the milk production slightly.

These findings indicate that corncobs cannot be used advantageously as a major part of the ration of high-producing dairy cows. The same likely is true of other low-grade roughages such as straw, stover and cottonseed hulls. Certainly, incorporation of these low-grade roughages in the commercial concentrate mixture can hardly be justified.

What are the extremes of roughages and concentrates in the diet of dairy cows? Local circumstances that may be due to milk marketing conditions or to difficulties in obtaining the roughages or the concentrates desired give rise to needs for feeding abnormal ratios. The possible extremes extend from all roughage to all concentrates.

All roughage—Physiologically, high producing cows may maintain a good state of health and good level of production on a good roughage diet (high grade legume hay and corn silage) providing that the diet is supplemented with phosphorus. Hoglund estimated that Holstein cows having a basic producing ability of 10,000 lb. of 3.5% milk could produce 7,500 lb. annually on a roughage diet. This may be profitable but may not be a means of maximizing net returns.

Observations at the Michigan Agricultural Experiment State indicate that supplemental grains provide not only a concentrated source of energy but also aid in developing conditions whereby the combination of feeds enhance utilization efficiency. For cows that do not have the feed

(Continued on page 55)

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For Pig and Hog Feeds

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Free-flowing, non-dusting Tecmangam is the clean, economical way to add manganese to feeds deficient in this element. It contains 70% manganese sulphate, is completely soluble and readily assimilated. Use at least one pound per ton of feed.

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CONVENTION CALENDAR

Nov. 21-22—Western Grain & Feed Assn.; Fort Des Moines Hotel, Des Moines, Iowa; sec., Mark G. Thornburg, 928 Des Moines Bldg., Des Moines 9, Iowa.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago; sec., W. M. Beeson, Purdue University, Lafayette, Ind.

Dec. 2-3—Arkansas Feed Manufacturers Assn.; Arlington Hotel, Hot Springs; sec., James Dunaway, P.O. Box 549, Little Rock, Ark.

Dec. 5-6—Farmers Elevator Assn. of South Dakota, Huron, S.D.; sec., Cliff C. Anderson, 327 Citizens Bldg., Aberdeen, S.D.

Dec. 8-9 — North Carolina Feed Manufacturers Assn. Nutrition Conference; College Union Bldg., N.C. State College, Raleigh; sec., William Hoyle, Laurinburg Milling Co., Laurinburg, N.C.

1956

Jan. 6-7—Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

Jan. 9-10—Kansas State Formula Feed Conference; Kansas State College, Manhattan; chmn., Dr. F. W. Atkeson, Kansas State College, Manhattan, Kansas.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque; sec., H. B. Hening, P.O. Box 616, Albuquerque, N.M.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Nicollet, Minneapolis, Minn.; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23—Nevada Feed Conference; Univ. of Nev., Reno; chmn., Dr. J. F. Kidwell, U. of Nev., Reno, Nev.

Jan. 22-24—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade, Indianapolis, Ind.

Jan. 23-25—North Dakota Poultry Industries Convention; Elks Club, Fargo; chmn., Irving J. Mork, North Dakota Agricultural College, Fargo, N.D.

Jan. 23-25 — Southeastern Poultry and Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., J. Paul Williams, 615 E. Franklin St., Richmond, Va.

Jan. 26-28—American Dehydrators Assn.; Hotel del Coronado, Coronado, Cal.; exec. V. P., Joseph Chrismar, Dwight Bldg., Kansas City, Mo.

Feb. 3-4—Minnesota Turkey Growers Assn.; Radisson Hotel, Minneapolis; sec., Alfred E. Eisenmenger, 2200 University Ave., St. Paul 14, Minn.

Feb. 7-8—Utah Nutrition and Production Conference; Utah State Agricultural College, Logan; sec., Dr. Lawrence Morris, Animal Husbandry Dept., Brigham Young Univ., Provo, Utah.

Feb. 12-14—Wyoming Grain, Feed and Seed Dealers Assn.; Laramie, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 12-14—Grain Processing Machinery Manufacturers Assn.; Edgewater Beach Hotel, Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

Feb. 17 — Washington State Feed Assn.; Chinook Hotel, Yakima; sec., John G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 19-21—Colorado Grain, Milling and Feed Dealers Assn.; Shirley-Savoy Hotel, Denver; sec., R. B. Kelley, 605 Bining Exchange Bldg., Denver, Colo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Commodore Perry Hotel, Toledo; sec., L. E. Folsom, 222 Chatham Rd., Columbus 14, Ohio.

Feb. 22-23 — Virginia Polytechnic Inst. Nutrition School; Hotel Roanoke, Roanoke, Va.; chmn., Paul M. Reaves, V. P. I., Blacksburg, Va.

Feb. 27-28 — Midwest Feed Mfrs. Assn.; Hotel Muehlebach, Kansas City; exec. V. P., Lloyd S. Larson, 20 West Ninth Street Bldg., Kansas City, Mo.

March 7 — Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; sec., Lawrence Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

March 15-16 — Oregon Feed and Seed Dealers Assn.; Multnomah Hotel, Portland; sec., Leon Jackson, 809 Lewis Bldg., Portland 4, Ore.

March 18-23—Grain Elevator and Processing Superintendents; Muehlebach Hotel, Kansas City, Mo.; sec., Dean M. Clark, "Grain," Board of Trade, Chicago 4, Ill.

March 22-23—Maryland Nutrition Conference for Feed Mfrs.; Shoreham Hotel, Washington, D.C.; chmn., Dr. G. L. Romoser, U. of Md., College Park, Md.

April 5—Texas Feed Manufacturers, Hotel Texas, Fort Worth; sec., Monroe U. May, P.O. Box 6666, Dallas 19, Texas.

April 6-7 — Texas Grain & Feed Dealers Assn., Hotel Texas, Fort Worth; sec., Ben Ferguson, 614 Meacham Bldg., Fort Worth 2, Tex.

April 12-14—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; sec., John F. Gilmore, 1400 Tenth St., Sacramento 14, Cal.

April 16-17—Nebraska Grain and Feed Dealers Assn.; Hotel Cornhusker, Lincoln; sec., Howard W. Elm, 917 Trust Bldg., Lincoln, Neb.

May 3-5 — Kansas Grain & Feed Dealers Assn.; Kansan Hotel, Topeka; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 21-22 — National Cottonseed Products Association; Statler-Hilton Hotel, Dallas; sec., John F. Moloney, 19 S. Cleveland St., Memphis, Tenn.

May 23-25—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4, Ill.

June 4-5 — Eastern Federation of Feed Merchants; Hotel Commodore,

Complete Duplex Agitator Molasses Mixer System - Bull. 165
Horizontal Batch Mixers Bull. 165
Snappy Shakers and Air Finishers Bull. 502
Hi-Capacity Receiving Scalper Bull. 185
Super Cleaner-Receiving Separator - Cat. 180-A
Oat Crimper-Corn Cracker Crumbles Roll - Bull. 184
O. K. Bagging Scale - Bull. 502 Automatic Weighers Bull. 102-B
In-Suspension Wheat, Corn or Cracked Corn Scourer Cat. 160, 168, 169
Corn Cutters, Graders and Related Eqpt. - Cat. 167-A
Flour and Feed Packers Cat. 178-A
Vertical Batch Mixers Bull. 165
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New York; sec., Howard J. Benson, Eastern Federation of Feed Merchants, Sherburne, N.Y.

June 4-5—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-9 — Grain Processing Machinery Manufacturers Assn.; French Lick Springs Hotel, French Lick, Indiana; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 11-12 — Montana Nutrition Conference; Montana State College, Bozeman; chmn., O. O. Thomas, Montana State College Agricultural Experiment Station, Bozeman, Mont.

June 15—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane, Wash.

June 17-19 — Indiana Grain and Feed Dealers Assn.; Purdue Union Bldg., Purdue University, Lafayette, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 28-30—Association of Southern Feed and Fertilizer Control Officials; Hotel Roanoke, Roanoke, Va.; sec., Bruce Poundstone, U. of Ky. Agricultural Experiment Station, Lexington 29, Ky.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

St. Regis Paper Sales Reach New Peak Level

NEW YORK — Sales and net income of St. Regis Paper Co. reached new peak levels during the first nine months of 1955. Sales in that period were at $179,612,612, compared with $149,430,676, in the comparable period of 1954.

The company points out that about half of this increase was due to sales of subsidiaries acquired during the year—Michigan Panelyte Molded Plastics, Inc., and Pollock Paper Corp. sales being consolidated from the dates of acquisition. The increase also reflects inclusion of nine months sales of Superior Paper Products Co. as against six months sales included in 1954. The rest of the increase was due to a higher rate of operation in practically all mills and plants.

The company reported net income for the first nine months of this year, after provision for income taxes, at $13,175,434, compared with $11,456,784, in the like period of last year. The current earnings were equal to $2.15 per share of common stock on 5,932,478 shares, compared with $2.01 earned in the first nine months of 1954 on 5,467,428 shares.

However, the company points out, the nine months' consolidated earning for 1955 included only six months' earnings for Michigan, and four months' earnings for Pollock.

Directors of the company have declared a dividend of 45¢ a share on the common stock, payable Dec. 1 to stockholders of record Oct. 29. This will bring the total dividend payments for 1955 to $1.80 a share in comparison with $1.57½ for 1954. The board also has declared the regular quarterly dividend of $1.10 a share on the preferred stock, payable Jan. 1, 1956, to holders of record Dec. 2.

The company reports that it has consummated the arrangements for purchasing the common stock of General Container Corp. of Cleveland.

COMPLETION DATE NEAR

OKLAHOMA CITY, OKLA.—The new $110,000 feed and seed plant at the Red Rock, (Okla.) Cooperative Elevator is expected to be completed in December. Bob Case, manager, said the new plant will greatly expand feed mixing and seed facilities of the company and will provide a drive-in service.

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CDP
CORONET DEFLUORINATED PHOSPHATE
rates highest in South Dakota turkey poult diet performance

An approved report of the South Dakota Agricultural Experiment Station (Journal Series No. 312) rates Defluorinated Phosphate B (CDP) in first place among 15 phosphorus supplements tested.

The South Dakota investigators ran five experiments to determine the availability of phosphorus from various sources in feeding Beltsville White turkey poults from day-old to four weeks of age. The phosphorus level of the basal diet was approximately .06 percent, thus requiring the poult to obtain the major portion of his phosphorus requirements from the phosphorus supplement.

Results were measured in weights per poult, bone ash percentages and mortality. Table 5, reproduced below, shows the combined ratings of all 15 phosphorus supplements. Defluorinated phosphate B is CDP.

Rating of the phosphorus supplements used with respect to body weight, bone ash and mortality when dibasic calcium phosphate is set equal to 100 and when these supplements supplied 0.8 percent levels of phosphorus to the poult diet.

Dibasic calcium phosphate U.S.P. XIV	100
Defluorinated phosphate B	101
Monobasic calcium phosphate	97
Defluorinated phosphate C	94
Defluorinated phosphate A	75
Tribasic calcium phosphate N.F. IX	73
Steamed bone meal	75
Beta tricalcium phosphate	60
Commercial dicalcium phosphate No. 2	66
Commercial dicalcium phosphate No. 1	63
Imported rock phosphate A	0
Imported rock phosphate B	0
Colloidal phosphate No. 1	0
Colloidal phosphate No. 2	0
Colloidal phosphate No. 3	0

The South Dakota investigators chose 0.8 percent level of phosphorus because this level was below optimum growth requirement and would provide a more critical assay of the availability of the phosphorus sources.

The South Dakota report summary (in part) reads:

"Poults appear to be more sensitive to source or composition of phosphates than do chicks and this is attributed in part to the difference in growth rates."

"Considerable variation in performance was noted between defluorinated phosphates used and between the dicalcium phosphates which may result from the original source of the material or the processing of the phosphate, or both."

Your request will bring a copy by return mail of the complete South Dakota report covering the above trials.

This Report appeared in Poultry Science Volume XXXII, No. 5

Coronet Phosphate Company
A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED • NORFOLK 1, VIRGINIA

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Worth Looking Into

New Products
New Services
New Literature

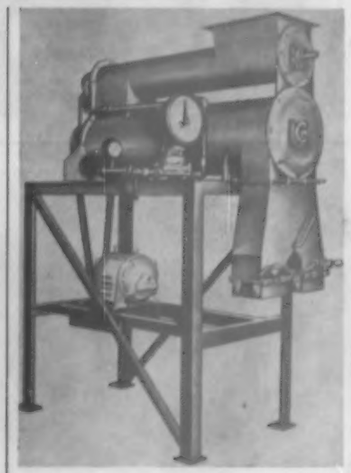
This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5340—Mastitis Treatment

Trade name of a new animal health product produced by the Dr. LeGear Medicine Co. is Hypo-Zyme-6. The company announcement states that the product is for treatment for mastitis, for both acute and chronic cases. It claims a special enzyme action that aids in mastitis treatment. A disposable hypo-syringe is provided. The products come available in a shelf display or in a box display. Secure more complete details by checking No. 5340 on the coupon and mailing it to this newspaper.

No. 5339—Molasses Mixer

A molasses mixer has been added by the Fort Worth Steel & Machinery Co. to its line of feed mill machinery. The mixer has a feeder designed to control the flow of material to the mixing drum. Capacity of the feeder can be changed by manually setting the variable pitch pulleys on the feeder drive. The 6-ft. blending chamber has a door which is secured with fast-operating manual fasteners, for quick access to the interior. Feeder and mixing drum shafts are mounted on self-aligning flange ball bearings. Mixing paddles are constructed of heavy steel and are bolted to the shaft. Mixing time of material can be changed by re-setting the paddles. With 35-pound-per-cubic-foot material, the mixer should produce approximately 90 to 120 hundred-pound



bags of feed per hour with 10 to 25% molasses content, its manufacturer claims. Secure more complete details by checking No. 5339 on the coupon and dropping it in the mail.

No. 5336—Drug Application

The Vineland Poultry Laboratories has available without charge literature describing its "50" series of packaging and applying poultry medicinals. The company's "50" series includes a list of drugs that have been pre-measured, according to the manufacturer, with "precision accuracy and designated for use specifically with the 50-gal. system." The company's suggested method of drug application is to pour the pre-measured dosage into the 50-gal. drum filled with water and 50 gal. of accurately measured medicated water are obtained. "Overdosage, underdosage of drugs, which may cause sickness or flock mortality is overcome by this method," the Vineland firm added. Secure the literature by checking No. 5336 on the coupon and mailing it to Feedstuffs.

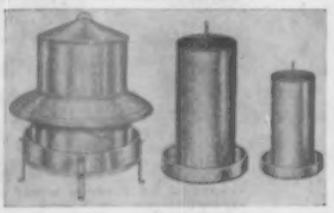
No. 5337—Bulk-Bag Feed Body

A new bulk-and-bag feed body, named the "DU-ALL," has been introduced by the Baughman Mfg. Co. The all-purpose body has front-end discharge which, according to the manufacturer, offers better weight distribution of the body and provide better visibility for the driver. The body interior is of unobstructed design, to permit maximum load in minimum space. Discharge features include: Hydraulically operated discharge auger with a 6-in. screw. It

is raised and lowered by means of a manually operated hydraulic ram. Swivel positioning is done by hand operation. The 9-in. body and vertical augers are driven by power take-off. The feed grate sets over the body auger for bulk feed and serves as floor support for bag feed. The unit is available in four body lengths: 8 ft., 10 ft., 12 ft. and 14 ft. For additional information check No. 5337 on the coupon and drop it in the mail.

No. 5338—Feeder Units

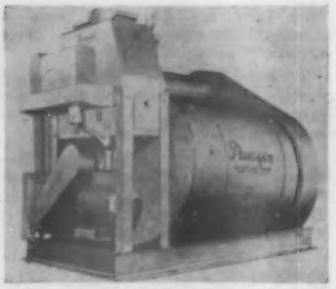
Three new feeder units have been announced by the Brower Manufacturing Co. Brower No. 249 giant round feeder is designed for birds of all ages—two week old chicks up to finished broilers or laying hens. According to the manufacturer, one filling handles 125 broilers for a week. Features of the feeder include a 3-position adjustment to regulate feed



flow. A clip on feeder top is provided for hanging top on edge of hopper when filling. No. 50J—50-lb. "Jiffijust" hanging feeder and No. 20J—20-lb. "Jiffijust" hanging feeder both feature a speedy, non-slip, 5-position feed flow adjustment. Other features include a 3-point suspension design which, according to the manufacturer, makes the 2-piece bottom pan extra rigid so it cannot sag or become loose. Secure more complete details by checking No. 5338 on the coupon

No. 5341—Seed Treater

The model KS-5 is a new automatic seed treater for the application of Panogen liquid seed disinfectant, it has been announced by Panogen, Inc. The model is designed for liquid seed treatment of wheat, oats, barley, flax, cotton, etc. V-belts have been replaced by a new roller chain drive and speed reduction gear. The only V-belt used drives a fan which re-



moves dust and fumes. The treater employs a modified "dip" measuring device. The model is rated at 350 bushels per hour capacity. Dimensions are: Height 43½ in., length 51½ in., width 32½ in. Secure more complete details by checking No. 5341 on the coupon and mailing it to Feedstuffs.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5324—Plastic 12-qt. container for calf product, National Vitamin Products Co.

No. 3798—Care and maintenance of concrete floors, National Sanitary Supply Assn.

No. 5308—Molasses mixer, Duplex Mill & Manufacturing Co.

No. 5309—Accounts receivable plan, Remington Rand.

No. 5310—Hammermill, Duplex Mill & Manufacturing Co.

No. 5311—Automatic seed treater, Panogen, Inc.

No. 5312—Chronic respiratory disease product, Dr. Salsbury's Laboratories.

No. 5313—Liquid vitamin A palmitate for adqueous dispersions, Chas. Pfizer & Co., Inc.

No. 5315—Bulk feed body, Helm Manufacturing Co.

No. 5316—Torula yeast for feeds, Red Star Yeast & Products Co.

No. 5317—Feed mixer, Wenger Mixer Mfg. Co.

No. 5320—Salt drum promotion, International Salt Co.

No. 5322—Calf creep feeder, Brower Manufacturing Co.

No. 5323—Grain and roughage storage unit, A. O. Smith Corp.

No. 5325—52-ft. tubular grain elevator, West Fargo Manufacturing Co.

No. 5328—Pressure sensitive tape for patching multiwall bags, Behr-Manning Division, Norton Co.

No. 5329—Folder on portable formula feed blender, Barnard & Leas Manufacturing Co.

No. 5330—Plastic base material to coat boxcars, J. W. Mortell Co.

Send me information on the items marked:

- ☐ No. 5336—Drug Application
- ☐ No. 5337—Bulk-Bag Feed Body
- ☐ No. 5338—Feeder Units
- ☐ No. 5339—Molasses Mixer
- ☐ No. 5340—Mastitis Treatment
- ☐ No. 5341—Seed Treater

Others (list numbers) .....

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Letters to the Editor

To the Editor:

I hold your magazine in very high regard and read it with considerable interest and get a lot of information that is very helpful to us out of it. However, I was a little bit disappointed in the "Uncle Tom's Feed Fables" article (in the Oct. 15 issue); it would have been excellent if the writer had left out the two paragraphs which I have outlined.

(The "Feed Fables" said, in part: "I've sat around with a bunch of farmers and tried to look smart when they're talkin' about contour plowing, fertilizer, different kinds of hay, farm machinery and such things when it's all Greek as far as I'm concerned. . . . That's their everyday business and they are experts on such subjects, but in the technical side of feeds they just don't have the time or the opportunity to keep up. . . .")

If I had a salesman working for me that was as completely ignorant about contour plowing, fertilizer, different kinds of hay and farm machinery as you indicate in this article, he certainly would have no place in my organization; and I do not believe that anyone interested in sales to farmers, and particularly feeds, could do an intelligent job if they did not know anything about the indicated subjects. How, in the name of heaven, could feed salesmen intelligently advise a man on his feeding problems if they didn't know the different kinds of hay.

I constantly emphasize the importance of the men in our sales organizations becoming as familiar as possible with all phases of agriculture so that they can sit down and intelligently discuss the farmer's problem with him and attempt to assist him in solving it.

I don't mean to imply that a salesman should have the highly trained specialized knowledge of all phases of farming, but he certainly should be familiar with the basic principles and practices. Also the materials used by the farmer to feed his livestock.

L. W. McCallum
Agricultural Equipment Co.
Great Falls, Mont.

Wheat Quota Violator Refuses to Pay Lien

OIL CITY, PA. — A 46-year-old dairy farmer near here who planted more than his wheat quota acreage has been ordered to pay a $404 lien that the U.S. government has placed against his farm, or have his farm sold.

Farmer Harmon has said he won't pay.

The trouble started when Mr. Harmon was told by government agents that he could sow only nine acres to wheat. He went ahead and planted 24 acres to feed his cattle.

The Vanango County Agricultural Stabilization and Soil Conservation Committee reported to the state headquarters after two of its members had talked with Mr. Harmon. The information was passed to Washington where officials decided Mr. Harmon owed $357 in penalties. The U.S. district attorney in Pittsburgh tacked on $47 for costs.

Mr. Harmon said, "I have never had any part of subsidy. I have made my own way. I'll be darned if I think this allotment and subsidy business is right or American." While the government decides what to do about his refusal to pay, Mr. Harmon, his wife and their 12 children are continuing to work the farm and feed the dairy herd.

Colorado Dealers Plan Convention

DENVER, COLO. — The 13th annual convention of the Colorado Grain, Milling & Feed Dealers Assn. will be held Feb. 19-21 at the Shirley-Savoy Hotel here it was announced this week by Tom Wark, president of the association.

R. B. Kelley, 605 Mining Exchange Bldg., Denver 2, is secretary of the organization.

SUPPLEMENTING ROUGHAGES

(Continued from page 50)

capacity to consume and process sufficient roughages to provide nutrients to meet the milk producing capacity, Hoglund stated "it is doubtful if there is any roughage produced today that is of such high nutritive value that it can economically be substituted for all the grain in the ration."

Low-roughage diets—As previously indicated, roughages are differentiated from concentrates by physical properties as well as by chemical. The dispensability of some of the unique characteristics of roughage in the diet of dairy cows has been subjected to extensive investigation in recent years. Though cows are able to survive and to produce on an all-concentrate diet, generally physiological disturbances, such as impaired and depraved appetites and reductions in milk yield but more particularly in fat, are manifested.

Reduction in fat percentage has been noted by researchers in this country and in England either when the roughage intake per cow is re-

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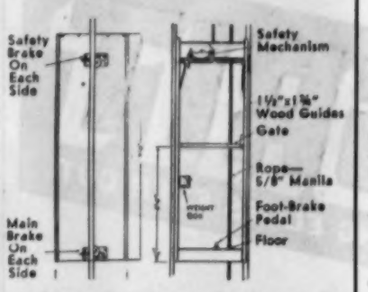
NEW PRODUCT NEWS

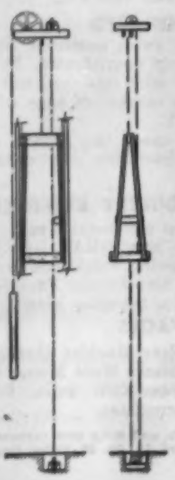
Better, Longer, Safer Service with Strong-Scott Manlifts

New Aluminum Manlift Is Sturdy, Lightweight, Fireproof, Non-Corrosive and Weatherproof

1. Strong-Scott's Aluminum Manlift in action. Notice the cross bar which protects the operator from accidental fall.



2. Above are drawings of Strong-Scott's Aluminum Manlift showing the safety features and some dimensions.



3. Illustrated directly above is a front and side view of the Wooden Manlift with E-Z Pull Attachment for easier operation. The E-Z Pull is available as a separate unit.

The photo at the top of the left hand column shows the Strong-Scott Aluminum Manlift, which boasts qualities not found on other manlifts. It's sturdy—it's lightweight—it's safe—it's fireproof—it's non-corrosive—and it's weatherproof. (This is especially important whenever the manlift is used outside with grain storage tanker.) These advantages enable the Strong-Scott Aluminum Manlift to give better, longer and safer service than any other manlift on the market. Operation and safety features are illustrated in the middle of the left hand column.

LARGE SURFACE MAIN BRAKES

During normal operation the lift can quickly and easily be stopped by the large surface main brakes. These are activated by a foot pedal on the floor of the car. As long as the operator keeps his foot on this pedal, the car can be moved. But as soon as he removes his foot, the main brakes are activated and the car comes to an immediate halt.

DUAL SAFETY BRAKES

The Strong-Scott Manlifts are also equipped with safety brakes on the top of the car. If, for some reason, the cable which holds the counterweight should break, heavy, high-tension springs immediately activate these safety brakes. All Strong-Scott Manlifts feature safety brakes on BOTH sides. This insures absolute safety.

BRAKES ARE ADJUSTABLE

All four brakes on the Strong-Scott Manlifts are self-adjusting for unevenness in the guide rails. Also, each brake can be adjusted manually. The brake action is actuated by an eccentric gear which with the design of the brake shoe causes the holding action to increase as the load increases. Brake shafts are square and set in square holes in the gear. This prevents slippage which might occur with round shafts.

SOLID SIDE PANELS

Another interesting safety feature of the Strong-Scott Aluminum Manlift is found in the design of the car. Unlike most manlifts, the Strong-Scott Aluminum Car has solid panels on two sides. These sides protect the operator against injury from the elevator legs, machinery or whatever is alongside the lift travel.

SPECIAL SAFETY GATES

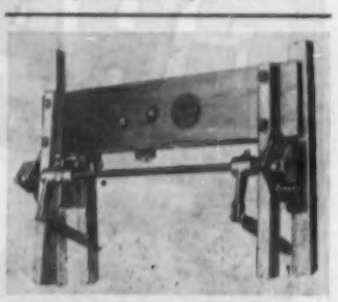
The two open sides of the aluminum manlift car are equipped with special safety gates. Each gate consists of a bar, hinged to one side of the car, which can be lowered across the opening when the manlift is in use, to protect the operator.

ANTI-SKID FLOOR PREVENTS ACCIDENTS

An additional safety feature of the Strong-Scott Aluminum Manlift is the anti-skid coating on the car floor. Other metal manlifts may become quite slippery, but this special coating permits the operator to move about without worry, even if there is dust or water on the floor of the manlift.

STRONG-SCOTT WOODEN MANLIFT

The Strong-Scott Wooden Manlift has many of the outstanding features of the aluminum lift. Illustrated at the bottom of the left hand column is a typical wooden lift.



4. DUAL SAFETY BRAKES—In both the wood and aluminum lifts, these brakes are located at the top of the car and are activated by heavy, high-tension springs. This view shows the brakes set against the guides, but when the counter-weight is attached, it holds the brakes open.

For further details on the Strong-Scott Aluminum or Wooden Manlifts write to the Sales Department at the Strong-Scott Mfg. Co. for a New Product Bulletin.

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duced below 4 or 5 lb. daily or when the roughage is finely ground. Similar reductions have been noted under field conditions when roughages were reduced and compensatory increases in concentrates were effected. Thus, in practice apparently the dairy cow ration should contain more than 5 lb. of roughage daily.

Inadequate Acetic Acid

Recent explorations of the problem have revealed that the probable cause of the drop in fat percentage is inadequate acetic acid production in the rumen. Direct addition of sodium acetate (1 lb. daily) to the concentrate mixture (Jour. Dairy Sci., 38: 310, 1955) restored the fat level but did not effect increases above the normal level. The practical use of sodium acetate in concentrates for dairy cows remains to be established.

Further investigations by English workers (Jour. Dairy Res., 22:10, 1953) demonstrated that in diets containing the same low amount, 4 lb. daily, of hay (and hence have the same physical properties of "bulkiness" or "fibrousness") and supplied similar amounts of starch, the nature of the starch determined whether the diet affected the milk fat percentage. Flake maize effected a greater reduction than did either maize meal or dredge corn (a mixture of barley and oats).

The authors postulated that the flaking process, involving rupturing of the starch granules and dextrinizing by passage between heated rolls, may adversely affect the bacterial metabolism in the fore-stomach. Thus, insufficient acetic acid may be formed to maintain the fat percentage in the milk. If this explanation is substantiated, the preparation of concentrates to supplement roughages may necessitate increased consideration of the processing of the ingredients as well as the provision of different kinds and amounts.

Summary

The kinds and the amounts of nutrients needed to supplement roughages in the diet of the dairy cow depend on the total nutrient needs of the cow, and the nutrients supplied by roughages—the basal component of the dairy ration.

Since these two items are subject to wide variations, the task of adjusting diets to individual cows becomes overwhelmingly impractical; thus feeding programs usually are adopted on the basis of the herd.

In the preparation of commercial concentrate mixtures for populations of dairy cows, the feed manufacturer must make several basic assumptions: that the ability of the cows to produce is such that the cows can utilize concentrate feeds profitably; that most of the dairymen attempt to follow modern hsubandry practices, and that marked digressions from standard feeding recommendations in providing roughages will be considered by the dairyman in his deciding upon amounts of concentrate to feed as well as upon kinds of nutrients in the mixture.

Insurance of success in the use of supplemental concentrates necessitates using the feeds within the framework of the listed assumptions. Thus, if the dairyman does not have an acceptable program, one should accompany the sale of the concentrate feed. (Sound information is an essential ingredient in any roughage supplement.)

The current increase in custom preparation of dairy feeds on the farm presents a challenging opportunity to the well-trained dealer. Within the limits of present knowledge he can "design" the concentrate to fit the roughage available. He may then give directions for the construction of a sound feeding program by adjusting the amounts of the roughage and the "tailored" concentrates fed.

The usual adjustments considered in the formulation of concentrates to supplement roughages of known quality are amount of protein, amount of vitamin A activity and kinds and amounts of minerals.

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WORLD'S OLDEST AND LARGEST SPECIALISTS IN VITAMIN PRODUCTS FOR FEEDS

Studies of the Protein Requirement of Layers

● By F. W. Hill and D. L. Anderson

Department of Poultry Husbandry,
Cornell University

EDITOR'S NOTE: The accompanying article includes a report and comments on Cornell University studies conducted to determine the protein requirement under practical conditions for hens fed rations relatively high in energy value, and to obtain preliminary evidence of the effect of supplementary fat on this requirement. Among other things, the results indicated a protein-sparing effect of added fat. In discussing the results, the authors also comment on findings regarding protein - energy ratios. They also say that such ratios, at their present state of development, represent a limited concept of the relationships involved between nutrients and that their indiscriminate use contend to obscure rather than illuminate important interrelationships which merit further study. This article is the text of a paper presented at the recent Cornell Nutrition Conference.

According to most of the research evidence, the protein requirement of chickens for egg production can be met by a level of 15% crude protein (N x 6.25) in the ration. Heuser (1941)[1] reviewed the earlier work in this field which has formed the basis for the requirement estimated by the National Research Council Subcommittee on Poultry Nutrition (1944, 1954).[2,3]

The question has frequently been raised in recent years whether this level of protein is sufficient for high producing hens fed rations high in energy value. Reid, Quisenberry and Couch (1951)[4] concluded that under Texas conditions 18% protein was superior to 15% in a ration based on corn and soybean meal. Kinder and Day (1953)[5] reported Missouri experiments showing that 15% protein was adequate for both White Leghorn and crossbred pullets. Ringrose, Potter and Hatch (1954)[6] showed that the requirement of meat-type New Hampshire pullets was not over 15% protein.

Expressing the protein requirement as a percentage of the ration is convenient from the standpoint of feed formulation, but is probably less correct than considering it as a daily quantity dependent upon size of hen and rate of production. As a percentage of the ration, the protein requirement would be governed in large part by feed consumption per egg produced, and would be expected to vary inversely with factors affecting rate of feed intake. Protein requirement on this basis would be expected to increase with increasing rate of production, increasing environmental temperature, and increasing energy concentration of the ration, because each of these factors tends to decrease feed consumption per egg. On the other hand, protein requirement at high rates of production would be less for large hens than small ones, because the large hens consume more feed per egg.

Influence of Other Factors

Trends of these factors in poultry production and feed formulation have been in the direction of increasing protein requirement. However, this viewpoint disregards the influence of other factors tending to reduce protein requirement through increased efficiency of utilization. For instance, Berg and coworkers (1952)[7] showed that protein levels below 15% were used more effectively for egg production in the presence of vitamin B_{12} than in its absence. Furthermore, extensive studies with other experimental animals have shown that carbohydrate and fat have a marked sparing effect on protein requirement. The influence of temperature on protein requirement also may not be a simple one mediated through the influence of temperature on feed consumption; Heywang, Bird and Vavich (1955)[8] found that the protein requirement during hot weather was the same as found for the same population of hens during moderate temperatures, and was met satisfactorily with a protein level of 15%.

In the absence of specific experimental evidence, it cannot be assumed that changes in formulation practice, type of hen and environmental conditions influence protein requirement in accordance with simple concepts based on relative feed consumption. The experiments to be described were conducted to determine the protein requirement under practical conditions for hens fed rations relatively

Table 1—Composition of Basal Layer Ration for Protein Studies

Ingredient:	Amount
Ground yellow corn	1,020
Ground wheat	500
Soybean meal (44%)	150
Fish meal	50
Meat scrap (50%)	50
Corn dist. dried solubles	50
Dried whey	50
Alfalfa meal	40
Ground limestone	50
Dicalcium phosphate	25
Salt	10
Manganese sulfate (feed grade)	0.5
Vitamin A, D and riboflavin supplements	4.5
	2,000.0

Calculated composition: Protein, 15.0%; calcium, 1.8%; phosphorus, 0.8%; energy value—Productive, 960 Cal./lb.; metabolizable, 1,360 Cal./lb.

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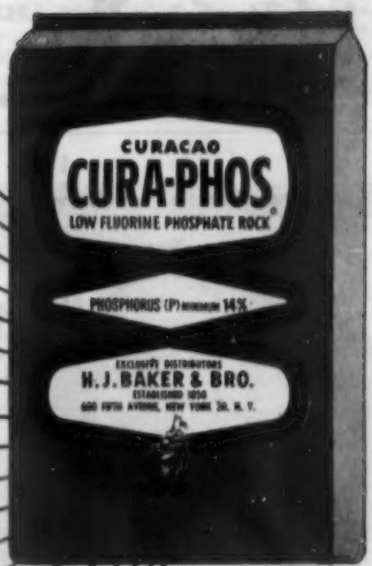

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high in energy value, and to obtain preliminary evidence of the effect of supplementary fat on this requirement.

Experimental Work

The basic ration used in all experiments is shown in Table 1. Protein level was controlled by varying the amounts of corn and soybean meal, all other components remaining constant.

Single Comb White Leghorn pullets, hatched in March or April, were used in all experiments. They were housed in small floor pens and fed the all-mash rations, grit and oyster shell ad libitum. No culling was practiced. In the first two experiments, a strain having a mature body weight of approximately 5 lb. was employed; in the third experiment, a strain of small Leghorns having a mature body weight of about 4 lb. was used. Each experiment covered a period of 10 or 11 months beginning in the fall and extending through the following August. Observations were made of rate of egg production (calculated on a hen-day basis), feed consumption, body weight changes and egg size.

Experiment 1: This experiment was conducted with three groups of 35 White Leghorn pullets housed in floor pens. They were fed experimental rations containing 14%, 16%, and 18% protein (air-dry basis). Previous experiments reviewed by Heuser[3] had shown that 14% protein was a marginal level, and it was considered possible that the requirement could be as high as 18% protein on the basis of the observed efficiency of rations of this type.

The egg production rates observed for the entire experimental period for the three respective pens were 60%, 64% and 64%. With the number of hens employed, the difference between the 14% and 16% levels of protein was of questionable significance; however, the conclusion seems justified that the protein requirement of this type of Leghorn under these conditions was no more than 16% of the ration. Efficiency was best with the 16% and 18% rations and approximated 4.6 lb. of feed per dozen eggs produced. No important changes in body weight, weight gains, or mortality were observed during the experiment. There was a slight tendency for egg size to be smaller in the low protein group, but the difference was not large.

Experiment 2: In the following year a similar experiment was conducted to compare protein levels of 14%, 15% and 16%. The respective egg production rates were 62%, 67% and 65% for the entire experimental period. With the numbers of hens employed, the difference between the low protein group and the others was of questionable significance in itself; however, the conclusion seems justified that the requirement for protein was satisfactorily met with the intermediate protein level, in this case 15% of the ration.

No important differences in average weight or weight gains were observed in the course of the experiment. Feed requirement per dozen eggs approximated 4.6 lb. of feed in both the 15% and 16% protein lots and was increased to 5 lb. of feed per dozen eggs in the group receiving 14% protein.

Experiment 3: The purpose of this experiment was to extend observations on protein requirement into a range of energy levels previously unstudied. This was accomplished by the addition of 5% of yellow grease to the basic ration with appropriate increase in soybean meal level to maintain protein in accordance with the experimental plan. Previous work in these laboratories on the effect of added fat on egg production and efficiency had shown an improvement of 10% in the efficiency of egg production through the addition of 5% of animal fat to this type of ration. On this basis, it would be reasonable to expect that the protein requirement would increase from 15% to 16.5%. Accordingly the three protein levels selected for study in this experiment were 15%, 16.5% and 18%, fed in the presence and absence of 5% added yellow grease.

In the absence of added fat, egg production at the three protein levels was respectively 56%, 61% and 62% on a hen-day basis. Evidently, the protein requirement of this strain of Leghorns was between 15% and 16.5%, somewhat higher than for the larger Leghorns used earlier. On the basis of the usual concept of protein-energy ratios it would be expected that the addition of fat to the 15% protein ration would tend to intensify the protein deficiency and lead to a still lower rate of production. This did not occur. Production rates were respectively 64%, 68% and 66% for the three protein levels in the presence of added fat. All three rations were improved in terms of rate of egg production by the addition of fat, with the greatest improvement occurring with the 15% protein ration, where it was least expected. The protein requirement in the presence of added fat was no higher (if as high) as in the rations without added fat.

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ured as the feed requirement per dozen eggs produced, was quite satisfactory and in the expected range for all rations containing added fat, approximating 4.6 lb. of feed per dozen eggs. The 15% and 16.5% protein rations in the absence of fat were less efficient, requiring nearly 5.5 lb. of feed per dozen eggs produced; surprisingly, the group fed 18% protein in the absence of fat showed a marked improvement in efficiency, producing eggs with a feed requirement of only 4.7 lb. per dozen. There was no indication in the previous experiments that efficiency of production would be improved by increasing the protein level above that necessary for maximum production rate.

The observation in this experiment requires confirmation, since it is based on the response of only a single pen; however, if it is substantiated, it indicates that:

(1) The reason for the marked improvement in rate of egg production through the addition of fat to a low protein ration is due to a sparing effect of fat on the protein requirement either through improvement in energy level or through a specific effect of fat.

(2) Efficiency of protein utilization was limiting in the low protein rations fed without added fat; this limiting condition could be relieved either through the addition of protein (raising the level to 18%) or through the addition of fat by means of a protein sparing effect.

Calculations of relative efficiency by a method which eliminates the influence of differences in production rate and weight changes showed that the fat-containing rations were approximately 10% more efficient than the corresponding rations without fat, with one exception. The 18% protein ration without added fat was approximately as efficient as any of the rations with added fat.

Average body weight and weight gains tended to be higher in the lots

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As Basic High-Protein Ingredient for
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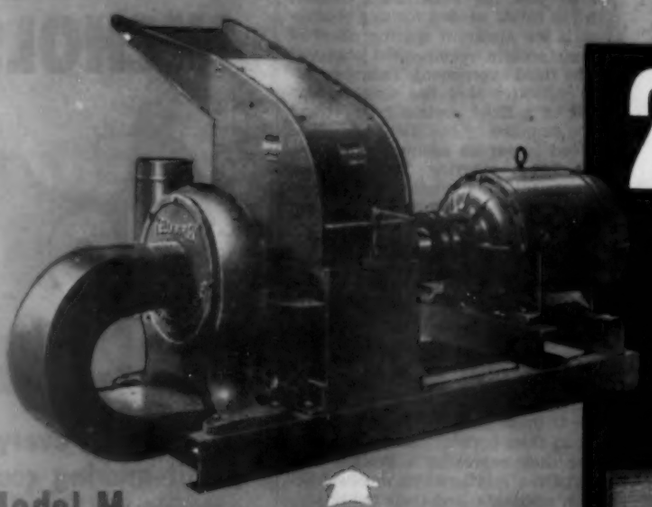

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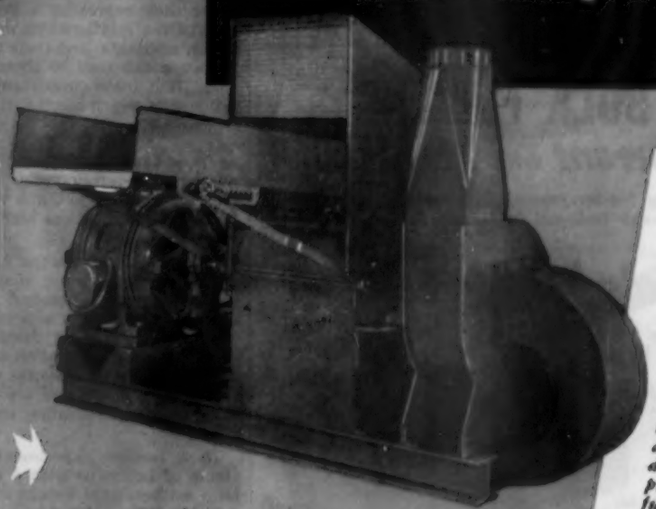

* We unconditionally guarantee that a Kelly Duplex Hammermill will grind more feed with the same power, conditions being equal, than any other hammermill on the market. If you are not completely satisfied, you are free to return the machine within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price.

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Lower Power Needs—⅛ hp. motor powers unit—inexpensive as a 100-watt light bulb!

Smaller Space Needs—35 inches long, 17½ inches wide, 19 inches high. Standard vibrating tray 16 inches wide—stainless steel when required.

Easier Control—simple adjustment over wide operating range (near 0 to 50 fpm. max.).

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Less Vibration—working frequency is 1850 vibrations per minute; little or no vibration is transmitted to mounting installation (mounts with only 4 bolts!).

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fed rations containing added fat, but the differences were relatively small. Egg size tended to increase somewhat with increasing protein level, but the differences were of questionable practical significance. Supplementation with fat had no effect on egg size.

Discussion

The first two experiments, conducted with White Leghorns with an average mature body weight of about 5 lb., showed clearly that the protein requirement for egg production was satisfactorily met with 15% protein in a ration containing approximately 960 calories of productive energy per pound or 1,360 calories of metabolizable energy per pound. In terms of the protein: energy ratios popularly being used, this would correspond to approximately 64 calories of productive energy per 1% of protein, which is a somewhat higher calorie: protein ratio than that estimated by Combs (1955)[9].

More important than the relatively small difference between the observed and the anticipated calorie: protein ratios needed for egg production is the apparent sparing effect of fat on protein requirement observed in the third experiment. This observation indicates that the simple viewpoint of a fixed protein requirement to be supplied by the daily allowance of feed is not an adequate basis for formulation practice. The existence of nutrient interrelationships limits the usefulness of any calorie: protein ratio to a limited range of energy values and a limited range of nutrient proportions for which specific experimental data are available. For example, further data are needed to show whether less than 5% added fat would exert a protein sparing effect.

Calorie: protein ratios can be a highly useful guide in feed formulation. It must be recognized, however, that at their present state of development they represent a limited concept of the relationships involved between nutrients, and their indiscriminate use can tend to obscure rather than illuminate important interrelationships which merit further study.

Conclusions

Three experiments have been conducted to determine the protein requirement of Single Comb White Leghorn layers fed rations high in energy value.

Using White Leghorns of a strain with a characteristic mature body weight of approximately 5 pounds, a level of 15% protein was found to be adequate to support maximum egg production with a ration containing approximately 960 calories of productive energy per pound (or 1,360 calories of metabolizable energy per pound).

In a further experiment using a strain of Leghorns with a characteristic mature body weight of approximately 4 lb., the protein requirement using a similar ration was found to be between 15% and 16.5% protein. The addition of 5% animal fat to this ration while maintaining the protein level at 15% increased egg production more than did supplementation with additional protein. The protein requirement in the presence of supplementary fat was no more than 16.5%, and was probably less. The data are interpreted to indicate a protein sparing effect of fat.

References

1. Heuser, G. F.—Poultry Sci., 20:262-268, 1941.
2. National Research Council, Comm. on An. Nutr. — Recommended Allowances for Poultry, 1944.
3. National Research Council, Comm. on An. Nutr.—Nutrient Requirements for Poultry, 1954.
4. Reid, B. L., Quisenberry, J. H., and Couch, J. R.—Poultry Sci., 30:935, 1951.
5. Kinder, G. B., and Day, T. W.—Poultry Sci., 32:903, 1953.
6. Ringrose, R. C., Potter, L. M., and Hatch, R. M.—Poultry Sci., 33:1078, 1954.
7. Berg, L. R., Bearse, G. E., McGinnis, J., and McClary, C. F.—Poultry Sci., 31:488-496, 1952.
8. Heywang, B. W., Bird, H. R., and Vavich, M. G.—Poultry Sci., 34:148-152, 1955.
9. Combs, G. F. — Proc. Univ. Md. Nutr. Conf. for Feed Mfrs., 1955.

Cornell Tests Eggs Without Shells

ITHACA, N.Y.—Homemakers may soon be buying eggs without shells, according to a Cornell University announcement.

The eggs, sold in 12-compartment polyethylene packets, should be cheaper and will be just as good as eggs in the shells, it is claimed. What's more, this system which incorporates certain electronic devices, will eliminate the present inaccurate system of grading eggs, according to Prof. L. B. Darrah, poultry marketing specialist, who developed the idea of "naked eggs" at the Cornell University Agricultural Experiment Station.

"Our program calls for these eggs to be in selected Ithaca stores within six months," Dr. Darrah said.

Cornell researchers will maintain a close watch on sales to determine consumer reaction.

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FIRST in HEALTH from pullet chick to laying house . . . top others by four or more laying pullets per 100 started, have far better livability and resistance to disease and temperature extremes in the house.

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FIRST in HATCHABILITY — 80 to 84% of all eggs set result in salable broiler chicks! They all but grade themselves, are yet to be topped in vitality from pipped egg to finished broiler.

FIRST in COMBINABILITY. There's a big bonus of extra health, feed efficiency, growth, and quality for the processor when broiler chicks sired by Vantress or Indian River males are mothered by Nichols No. 12s, the first and only nationally accepted females developed specifically for cross breeding.

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Positive identification of the best in broiler stock comes when both parents are identified. Folks with the biggest stake in the broiler industry say

Vantress-Nichols
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Available at hatcheries in every broiler area.

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How much E is enough?

More and more authorities are coming to regard vitamin E as part of a nutritionally complete poultry ration. We think you'll be interested in some of the recently published suggestions:*

Source	Year	Type of Feed	Amount Suggested
Dr. J. R. Couch Texas A. and M. College College Station, Texas	1955	Turkey breeder.	5,400–8,200 I.U./ton
Dr. Milton Scott Cornell University Dept. of Poultry Husbandry Ithaca, New York	1953	Turkey breeder, starter, and grower.	6,800 I.U./ton
	1954	Duck breeder.	6,800 I.U./ton
Dr. Harold Yacowitz Ohio Agricultural Experiment Station Poultry Department Wooster, Ohio	1955	Turkey breeder	10,000 I.U./ton
New England College Conference on Poultry Rations	1954	Turkey breeder and starter.	8,000 I.U./ton
		Turkey grower.	4,000 I.U./ton
Prof. F. E. Mussehl Univ. of Nebraska College of Agriculture Lincoln, Nebraska	1954	Turkey breeder.	10,000 I.U./ton
Dr. S. J. Slinger Ontario Agricultural College Dept. of Poultry Husbandry Guelph, Ontario, Canada	1954	Turkey breeder, starter, and grower.	6,800 I.U./ton
Dr. James McGinnis State College of Washington Dept. of Poultry Science Pullman, Washington	1955	Turkey breeder.	10,000 I.U./ton
Dr. E. P. Singsen University of Connecticut Poultry Science Department Storrs, Connecticut	1955	Chick starter and broiler.	14,000–22,000 I.U./ton†

†Dr. Singsen's recommendation covers total vitamin E from all sources. This allowance may be reduced in the presence of an antioxidant.

*Literature citations will be supplied on request to DPi.

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Satisfactory Year Reported by IMC

NEW YORK—Despite the most unfortunate strike in the company's history as a phosphate producer, Louis Ware, president of International Minerals & Chemical Corp., told stockholders at the annual meeting Oct. 25 prospects for a satisfactory year seem promising.

Reviewing the fiscal year ended June 30, 1955, Mr. Ware referred to earnings of $6,321,903 compared with $6,043,979 for the previous year, which was equivalent to $2.55 per common share, compared with $2.44 for the year ended June 30, 1954.

He pointed out that the four-month strike in the Florida phosphate fields occurring as it did in the historically low sales volume season of the corporation's operations, resulted in losses during the last month of the past fiscal year and particularly during the first three months of the current fiscal year.

However, he said, "While the strike was damaging it was only of a temporary nature and we are rapidly getting back to normal." Continuing, he said, "I believe the chances are favorable for our being able to recoup some of our losses which together with improved and expanded operations in the new plants should result in earnings about as good as the previous year."

Stockholders reelected all directors and approved a stock option plan for employees, providing for the purchase of common stock of the corporation at a price not less than 90% of the market value on Oct. 27, 1955. The options are designed to qualify as restricted stock option as defined in section 421 of the Internal Revenue Code.

Brewers' Dried Grain Production At Record Level

WASHINGTON — Production of brewers' dried grains in the U.S. during the 1954-55 year which ended in September, totaled 244,900 tons, a sizeable increase from the 226,500 tons produced in the previous year and the largest production in the past decade, according to figures released by the U.S. Department of Agriculture.

Stocks in the hands of producers Sept. 30, 1955, totaled 5,900 tons, slightly less than the 6,000 tons on hand the same date in 1954.

Average prices of the brewers' dried grains at two markets during 1954-55 dropped from the previous year. At St. Louis, the average price per ton bagged, in wholesale lots, was $49.80 in 1954-55, compared with $54.85 per ton the previous year. At Milwaukee, the average price dropped from $54.10 per ton in 1953-54 to $48.50 this year.

NOW... your feed business has unlimited territory!

WITH THIS PORTABLE FEED PROCESSOR YOU CAN SERVE MORE CUSTOMERS THAN WOULD EVER COME TO YOU

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PORTABLE
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. . . DOES EVERYTHING . . . ANYWHERE!

GRINDS . . . All grain . . . All roughage . . . Separately or together.

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BAGS . . . after grinding . . . after impregnating . . . or after mixing.

UNLOADS . . . through auger conveyors direct to bulk storage, wagons or bunkers.

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Hens Need Eating Room

Laying hens need 3 in. of feeder space apiece, says Dr. W. H. McGibbon, University of Wisconsin poultry specialist. That means about 24 ft. of feeding area or two 6 ft. feeders for mash for every 100 layers. With round feeders, one for every 20 laying birds should be used, Dr. McGibbon says.

Only one waterer for up to 200 birds is needed if there is running water—protected from freezing.

Keep plenty of nesting material in the nests, Dr. McGibbon advises poultrymen. About 95% of the dirty eggs are caused by nests not having enough clean litter. Most layers will kick the litter out, so it needs to be replaced often, he says.

If the birds start "feather picking," Dr. McGibbon says it's a good idea to debeak them, cutting the beaks short so that they won't grow back in a couple of months.

Some of the pullets may act like "social misfits" for a while after going into the laying house this fall. These flighty birds will usually eat if feeders are put on the roosts, but if they don't become accepted by the flock, it's best to cull them, according to Dr. McGibbon.

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Infrared Lamps Can Save Pigs

Each year about 3 million pigs are lost in the U.S. from chilling. But many farmers are saving an average of 1½more pigs per litter in the winter and spring by a simple installation of infrared lamps in the farrowing houses, says Bruce McKenzie, Purdue University extension agricultural engineer.

A 250-watt infrared lamp uses only six kilowatt hours of electricity per 24 hours of operation—at a cost usually less than 18¢ a day. A hog raiser can't afford to neglect chilling losses when it's such a simple and inexpensive operation to prevent them, Mr. McKenzie declares.

Hog farmers who plan for winter pigs can make electrical wiring improvements and have infrared heat lamps installed before the first brood arrives.

Heat from some source should be available when the temperature in the pen goes below 45°. Experimental research at Purdue has shown that weaker pigs chill in pen temperatures of 40° and lower, says Mr. McKenzie.

Since pigs chill easiest immediately after birth, an infrared lamp over the sow will give needed protection. The lamps can be moved to a protected corner within 24 hours after birth of the pigs.

One 250-watt lamp mounted 24 in. above the floor will prevent chilling when pen temperatures are as low as 15°. Heat will usually be required

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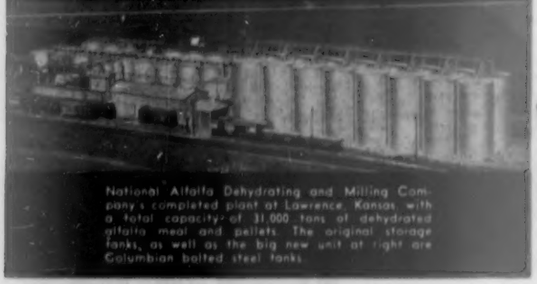

National Alfalfa Dehydrating and Milling Company's completed plant at Lawrence, Kansas, with a total capacity of 31,000 tons of dehydrated alfalfa meal and pellets. The original storage tanks, as well as the big new unit at right are Columbian bolted steel tanks.

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only three days after farrowing to prevent chilling, the Purdue specialist says. However, the operation of the lamp in a protected corner may be advisable for longer periods in order to keep the pigs from being crushed by the sow.

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Ways to Get More Eggs

Poultry raisers can get more eggs by following a number of suggestions. The poultry section of the University of Kentucky College of Agriculture & Home Economics, advises the following:

1. Be sure the lights in the laying house are turned on.

2. Prevent water from freezing by using a warmer or by placing an infrared light bulb over the water intake.

3. Keep a close check on the amount of feed being consumed and frequent handling of a few birds to see if they are losing weight. If feed consumption is less than it has been, stir the feed and add a small amount of water to the mash to stimulate consumption. This should be done in midmorning and midafternoon. If production has fallen, pellets may be fed at noon in addition to the moist mash; three fourths of a pound of pellets for 100 hens is enough. Do not use enough water to have wet mash left in the hopper after the birds have eaten for 30 minutes.

4. The litter need not be changed if enough ventilation is allowed in the house. Do not close the openings in the exposed side. If after allowing enough ventilation, there is a tendency for the litter to be wet, scatter hydrated lime or phosphate in the litter once or twice each week. If stirring is necessary, scatter grain over the floor once each day to encourage the hens to scratch.

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Water Vital to Cows

Drinking water is a vital factor in cattle production. Although water is one of the most plentiful substances in nature, it nevertheless is often a limiting factor in raising dairy cattle, says Dr. James Wadsworth, University of Vermont extension animal pathologist.

Here is what water does for the body, he points out:

It is needed to build and maintain all cells of the body. About half of a mature cow's body weight is water, and in calves, water may represent 70% of the body.

Water dissolves the food material absorbed from the digestive tract. Blood transports these substances and is itself over 80% water.

Water is needed to remove excretions from the body and its cells.

Water is the major constituent of the secretions from all glands of the body.

It helps maintain normal and constant body temperatures.

Water helps lubricate the eyes, mouth, joints, muscles, tendons, and all tissue-surfaces which move one upon the other.

To serve its most useful purpose, water must be clean and palatable, advises Dr. Wadsworth. It should be proper temperature for drinking by cows. Ice cold water chills the mouth, teeth and rumen contents and the cow is often discouraged from drinking. In warm weather, water should be below air temperatures.

A dairy cow producing 100 lb. of milk daily needs 60 to 70 gallons of water a day since milk is 87% water, Dr. Wadsworth says.

If a cow is deprived of water, feed consumption and digestive processes are limited. Therefore, water should be provided at all times, the Vermont specialist states. This way, cows drink small amounts of water frequently all day and night.

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ILLINOIS OFFICERS—New officers of the Illinois Feed Assn. elected at the Nov. 2-3 convention held jointly with the Illinois Poultry Improvement Assn. at Springfield are, left to right, Gale Baker, Baker's Feed Store, Charleston, president; Alben T. Myren, Faultless Milling Co., Springfield, treasurer, and Dexter Obenhaus, Community Feed Mills, Princeton, vice president. In the center photo, IPIA officers, from left to right, are Aubrey Hariess, Shelbyville, executive secretary-treasurer; G. C. Weaver, Weaver's Hatchery, Williamsville, vice president; C. J. Meier, Nashville (Ill.) Hatchery, president-elect; Clarence Stauffer, Laneview Hatchery, Waddams Grove, president, and Carl E. Key, Key's Hatchery, Delavan, vice president-elect. A University of Illinois panel presentation was an outstanding highlight of the convention. In the photo at the right, members of the panel, left to right, are Dr. J. O. Alberts, head of the department of veterinary pathology and hygiene; Dr. K. E. Gardner, professor of dairy production; Dr. A. L. Neumann, professor of animal science, in charge of beef cattle; Dr. H. M. Scott, professor of animal science, in charge of poultry; Dr. S. W. Terrill, professor of animal science, in charge of swine, and Dr. L. E. Card, head of the animal science department, panel moderator.

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Camera Views of the News

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NEW PURINA MILL OPENS—Eight tons of fried chicken and a half ton of potato chips were among the supplies of food consumed by the thousands of farmers and friends of the Ralston Purina Co. who celebrated the opening of the company's new mill in Harrisburg, Pa., recently (Feedstuffs, Oct. 29, p. 7). A crowd estimated by the Pennsylvania State Police at 17,000 persons inspected the big new Purina plant and stayed to eat a picnic dinner served by Purina. Radio and television stars Minnie Pearl and Hank Snow entertained the guests. The new mill, shown above, has a capacity of 800 tons of feed a day. It will manufacture the full line of Purina Chows. In the other photo, Dr. W. L. Henning, Pennsylvania commissioner of agriculture who welcomed Purina to Pennsylvania at the mill opening, receives a turkey wearing a checkerboard tie from George Richardson of the Ralston Purina Co. Other high officials of the federal and state governments, as well as leaders of business and agricultural organizations, were present.

AWARD—Arba Brutus, past president of the Indiana State Poultry Assn., is shown here presenting to Roy E. Roberts, professor, poultry science department, Purdue University, the Golden Egg Award for his outstanding contribution to the poultry industry. Prof. Robert currently is carrying on numerous research studies in nutrition of turkeys and broilers. The award was presented during the 37th annual meeting of the Indiana State Poultry Assn. at Indianapolis.

ILLINOIS CONVENTION CAMERA VIEWS—Those attending the joint convention of the Illinois Feed Assn. and the Illinois Poultry Improvement Assn. in Springfield recently heard several well-known speakers. Among them were, from left to right, Joseph Burger, sales manager of Cornell Seed Co., St. Louis, who presented an inspirational talk on sales work entitled "How to Get Better"; Ray B. Bowden, executive vice president of the Grain & Feed Dealers National Assn., Washington, who spoke on current developments in the nation's capital, and (at the far right) C. J. McAleavy, Wausau, Wis., second vice president of the American Poultry Hatchery Federation, who spoke on poultry trends. In the other photo, Quintin Siemer, Siemer Milling Co., Teutopolis, left, retiring president of the IFA, presents a television set to Robert Fischer, sales manager, Critic Feed Division, Beardstown (Ill.) Mills, who accepted it in behalf of his company as winner of the contest for new members of the IFA. Mr. Fischer said the set would be presented to a Springfield orphanage.

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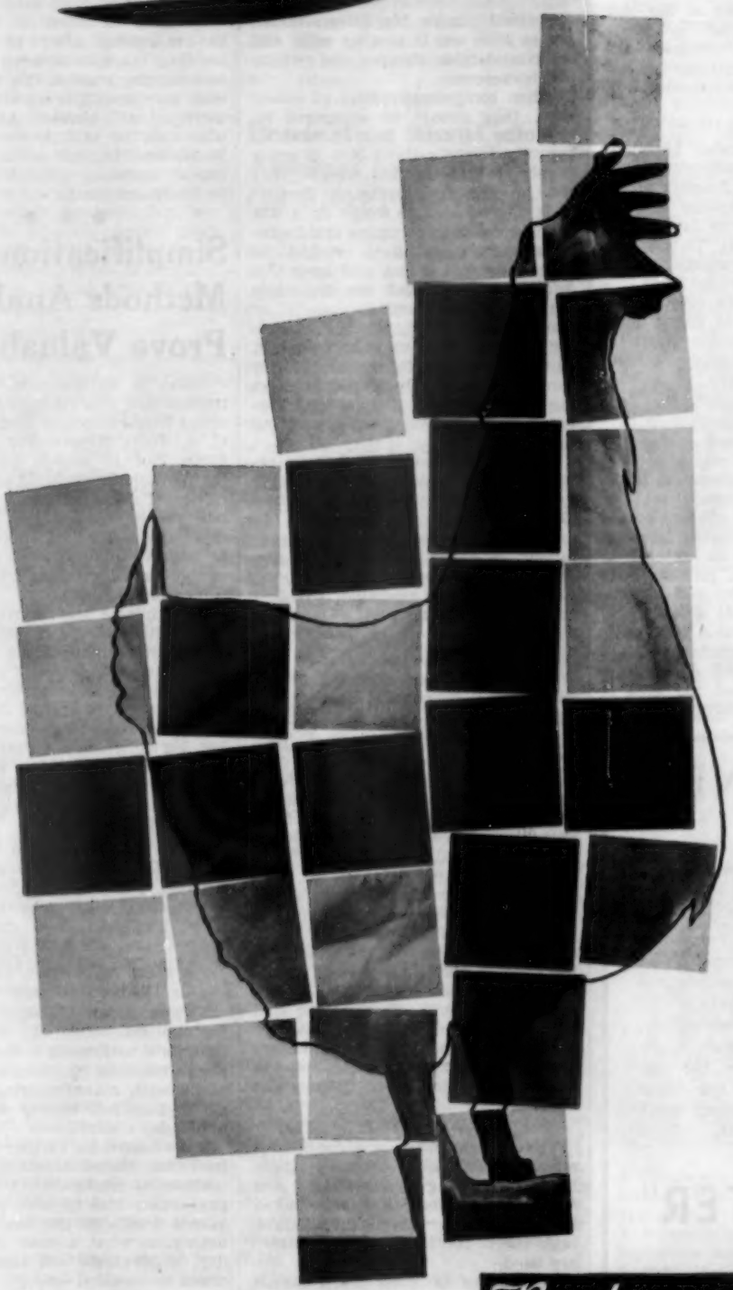

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Be Sales, Service-Conscious

— Where It Starts —

Selling starts on the production line.

This was stressed by James North, Nutrena Mills, Inc., Minneapolis, in a production school talk on the production department's responsibility in building feed business. A sale isn't completed until the feeder is satisfied with results and goes back for more, Mr. North said, and no amount of sales effort will keep a company on top of a buyers' market unless every member of the production department is indoctrinated with the philosophy that selling starts on the production line—where quality products are made.

Production, he said, must clearly understand the various functions for which it is responsible and must be staffed to fully perform every one of these functions.

"My plea to men in production," Mr. North said, "is to become more sales minded. . . . It is just as important that every member of the production department knows and understands the problems of supplying our dealers and feeders with the kinds of feed they want, as it is for a football team to understand the signals of the quarterback. A football team makes frequent use of the huddle to keep the signals straight. With more frequent huddles between sales and production, there's bound to be a better understanding of the problems of your business, giving the production department an even greater opportunity to contribute to the building of a successful feed business."

The best sales force in the world won't go very far unless production can and does build top quality in feed and gives to feeders and dealers the kind of service to which they are entitled and which they can get from competitors.

— Customer's Profit —

The horizon of the feed manufacturing industry must not be limited to profit dollars channeled into the treasury at point of sale of feed products. The horizon must be the ultimate profit dollars of the feeder from the production of meat, milk and eggs. If the industry cannot gain an ultimate profit for its customers as well as itself, it is missing its opportunity.

This was pointed out at the Midwest Production School by D. K. Webster, Jr., H. K. Webster Co., Lawrence, Mass., chairman of the American Feed Manufacturers Assn. board of directors.

Mr. Webster noted that poultry product sales total about $4 billion annually. Of this, poultrymen spend about $2.2 billion for formula feed—by far the biggest expense of poultrymen—and this factor is the feed industry's responsibility. To progress, the industry must recognize that it is much more of a partner in its customer's enterprise than ever before, and the opportunity to knock down the customers' cost dollars which are under the feed industry's control merits searching inquiry.

Mr. Webster discussed the feed manufacturer's opportunities in saving on customers' feed costs: (1) Good choice of ingredients to provide quality, nutritious, economical feeds. (2) Savings in manufacturing expenses through use of efficient equipment and methods suitable for each particular plant, such as better feed handling, push-button mixing, etc.; efficient sales methods; and holding down of overhead. (3) Cooperation with dealers to provide a fair, well-earned margin for efficient dealers who help the consumer. (4) Service for the feeder so that the feed is used right and profitably.

HOW MANY POUNDS
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IN A KILOWATT?

It's true, of course, that you can't measure feed in kilowatts, but you can establish the ratio between the amount of power used, and the amount of feed which has been ground. In fact, this is one method of determining the efficiency of a hammermill. Mill operators who check this pound-to-kilowatt ratio find that it clearly points up the superior efficiency of Jacobson hammermills, and the profit to be gained from a Jacobson-engineered installation. In addition, the convenient, trouble-free Jacobson hammermills provide a low labor cost-to-ton ratio. Talk to the Jacobson Sales Engineer about these ratios and what they can mean to you in increased profit.

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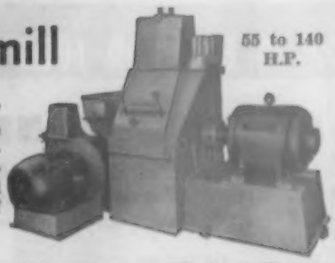

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FEED MIXING METHODS

(Continued from page 15)

advised, it is wise to consult the manufacturer regarding speed for which it was designed. Standard design for most horizontal mixers is for material weighing 35 to 40 lb. per cu. ft. Designs are available at little extra cost for minerals or other heavier materials. If over 1 or 2% of fats, oils or molasses is added in horizontal mixers, horsepower requirement may be increased from 20 to 50%.

Vertical mixers, Mr. Stivers noted, are in wide use in smaller mills and are considerably cheaper and require less horsepower.

When comparing mixers of either type, they should be compared on the basis of cubic feet of working capacity (usually about 90% of gross capacity) since actual weight that can be mixed depends on density. It is a good idea to weigh up a box of most common formulas and ingredients, then calculate weight in pounds per cubic foot and keep this information on hand for use when purchasing equipment.

A problem with vertical mixers, Mr. Stivers said, may be found in handling ingredients of wide density spread, although some vertical mixers are now equipped with special features to help overcome separating tendencies.

Basic things to remember in selecting a batch mixer for a specific job are: (1) number of ingredients; (2) quality of mix required; (3) method of charging mixer (i.e., premixing in charging or feeding conveyors ahead of mixer can cut mixing time); (4) space available; (5) first cost; (6) operating cost; (7) overall mixing cost per ton; (8) percentages of liquids added.

Continuous Mixing

Mr. Stivers went on to describe continuous mixing systems, types of mixing or collecting conveyors, feeders, etc. He noted that some continuous systems use gravimetric feeders on critical and high volume ingredients that are difficult to feed, with volume feeders on free-flowing and less critical items.

He said another type system, particularly where one formula is run for extended periods, is a combination of individual automatic batch scales on each ingredient, discharging into a collecting conveyor and then to a batch mixer. Mr. Stivers said one new mill of this type, specializing in poultry feeds, involves economical bin arrangements, feeders and scales with a single two-ton mixer to produce 18 to 20 tons per hour.

Wet Mixing

The various batch and continuous mixers have been used to apply liquids, including molasses, fat and fish oils, to feeds, Mr. Stivers noted in discussing wet mixing. In addition, high speed continuous liquid mixers are used.

For adding up ot 2% liquid animal fat to poultry feeds, horizontal or vertical batch mixers have been moderately satisfactory, where the fat is heated to 150° F. or better, Mr. Stivers said. In vertical mixers the melted tallow can be poured into the feed-in hopper while the corn or soybean meal is being introduced, or while the feed is recycling through the hopper after the mixer is charged. Also, fat may be pumped in the top of the mixer through a perforated pipe spray head. If this is done, a volume or weight measure is used to hold the fat charge, or a continuous flow meter is used, with devices to control the quantity. In horizontal mixers the fat may be poured in or sprayed in with the same equipment.

Mr. Stivers said that for adding up to 5 or 6% fat and 1 or 2% fish oil, one mill has had good results by spraying it on all ingredients prior to mixing. The liquids are added in a screw conveyor as the ingredients drop from a scale into the conveyor leading to the mixers. This gives a pre-mixing which seems to prevent lumps in the finished feed.

In most mills fats are heated in the main storage tanks to 110-115° for pumping to small holding tanks near the mixers, where the temperature is carried at 140-175°, being higher in winter to compensate for colder ingredients.

To overcome lump problems, many mills have installed, in addition to the re-bolting sifter or shaker, a blending machine between the mixers and bagging station. One machine in wide use, he said, is the single-runner attrition mill blender. Another popular unit, he said, is the large size Entoleter. Hammer mills and other impact machines also are being used to blend out lumps.

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Simplification and Methods Analysis Prove Valuable

There is no question that better trained men, new equipment and more space would help any feed plant, said C. A. Tolin, Ralston Purina Co., St. Louis. But, he added, none of these by themselves will bring greater efficiency. It's necessary to review methods, the layout and the flow. When this is simplified, it should be easy to improve quality, service and costs by "getting more from what we have—men and equipment."

Speaking at the Midwest Production School on work simplification and methods analysis, Mr. Tolin cited three basic things which can be done—(1) analyze and rearrange, (2) balance and combine, (3) simplify and eliminate. To do this takes some time, but it's worthwhile if many irritating and costly problems are to be eliminated—for example, too slow unloading, wrong size bins, packer not fast enough, legs inadequate.

Three tools are needed to start the study—(1) a flow chart showing capacities of equipment and handling facilities; (2) a warehouse and bin space analysis; (3) a complete job analysis on each man with emphasis on output per day, average and peak.

Find Bottlenecks

This information should be studied for the following: (1) Find where there is a bottleneck in flow; (2) find where handling facilities are not balanced with manufacturing; (3) find where men individually do not have a full day's work.

Before anything further is done, the feed man should decide on the most economical production rate, based on past sales history and present demands. Probably the next step is to determine what a man can do in a day, to eliminate lost time and hold down on wasted energy, and show the man how his job can be made easier and simpler by eliminating things he formerly did and rearranging the work.

What is a reasonable pace for a man? Mr. Tolin said dexterity should equal what it would take to deal a deck of cards in 30 seconds; walking speed should be 3 miles an hour. Regarding fatigue—a hand trucker handling 100-lb. bags off a chute should not be in motion more than two-thirds of the time, allowing one third for rest and personal needs; a pellet operator should be productive 85% of the time.

Mr. Tolin cited examples of how something big can be done in work simplification. For example, instead of wasting time on shutdowns because there is nowhere to go with the manufactured material, it might be found that one or two more holding bins would pay for themselves in two months.

Feed Packaging Discussed

Certain aspects of packaging—including sizes and kinds of bags, types of closures and speeds, tagging and coding—were covered at the Midwest Production School by Walter Stohrer, Allied Mills, Inc., Peoria. He noted that use of multiwall paper bags has more than doubled since 1951. Of the multiwall types, demand in 1954 ran as follows: sewn open mouth (gussets), 89.5%; sewn valve (gussets), 8%; pasted open mouth (tube), 2%; pasted valve (tube), .5%. On the west coast, 80 and 100-lb. multiwalls make up 75% of multiwall demand, and 50's only 25%. In the Midwest, these percentages are reversed.

Mr. Stohrer cited heavy use of textile bags in the East, Southeast and South, with widespread returnable burlap bag programs in certain broiler areas. In the South, there is a strong preference for cotton bags. Textiles permit ventilation and some cooling of feed in the sack. But, Mr. Stohrer said, properly cooled feeds shouldn't need cooling in the sack.

He also discussed types of closures, including tape, sewing without tape and valve closures.

Bagging Speed

Speeds, Mr. Stohrer said, are dependent on: (a) Whether multiwalls or textiles; (b) Product—mash, molasses feeds, pellets, crumbles; (c) Bag sizes—50-lb. 15" wide, 80-lb. 19", 100-lb. 20-26"; (e) Type of scales—manual or pre-weighing; weighing cycles—6 to 12 100's per minute, 10 to 22 50's per mnlute; weight tolerances. (f) Types of closures—open mouth, more speed, two men up to 22-24 per minute; tape, slower by 2 to 4 bags per minute; valve, 10 to 15 per minute, depending on product. (g) Use of automatic taggers and thread cutters—reduces manual operations; tape and thread savings, 50¢ to $1 per 1,000 bags; neat appearance, no dangling threads.

The question of speed, he said, is one of economics, concerning (1) direct labor cost; (2) machine or scale capacities, cycles, weight tolerances; (3) cost of feed packed (excess weights); (4) quality appeal in neat package containing guaranteed weight.

Mr. Stohrer noted that bag shakers and settlers will permit use of bags 1-4" smaller, depending on type of feed and speeds. Many operations are too fast to permit settling, sacrificing bag cost but gaining on labor use. Settlers permit savings of $1 to $4 per 1,000 bags, depending on size, kind, etc. Settlers are of two types—agitation from bottom and from top—and settling can be continuous or intermittent.

In tagging, automatic air operated or mechanical taggers free the operator for faster sewing and uniform location of tag improves appearance. Identified tape closures also are used, and bag printing may be used where formula and guarantee changes are rarely made.

Bag coding, a relatively recent innovation in the feed business, is used to identify a feed, formula used, date made and production operators, for purposes of defense against unjustified claims and for quality control. Coding can be done on the tag or tape by printing or perforating or on the bag by printing. Coding is generally done on the production line at or behind the sewing. Rotary printing coders frequently are used.

Mr. Stohrer made some brief comments on costs: Bag cost per ton of feed packed—$4 on 100-lb. burlaps, $5.50 on 100-lb. cottons, $3.50 on 50-lb. papers. Packing and sewing rates per minute, two men—12 on 100-lb. burlaps and cottons, 12-20 on 50-lb. papers. Tons packed per man-hour—18 on the burlaps and cottons, 9 to 15 on 50-lb. papers. On returnable bags, net costs are reduced by varying amounts, depending on certain factors.

• • •

Production Men Get Answers to Questions On Feed Packaging

Coding, bagging speeds and types of bags were among the subjects discussed by a packaging panel which included James Leker, Staley Milling Co., Kansas City, chairman; Walter Stohrer, Allied Mills, Peoria; Frank Greeley, Fulton Bag & Cotton Mills, New Orleans, and Harold Wies, Quaker Oats Co., Chicago.

In coding, a rotary type coder can be used which prints on the bag as it goes by. This is good for meal but may not be so good for pellets, Mr. Stohrer said. It is also possible to code on a tag by perforating or printing, although a problem is that the farmer may discard the tag. One person suggested sewing and tagging on the bottom of a bag.

Various opinions on speeds of packing 50-lb. bags were expressed. It was said that some mills do up to 24 or 26 a minute, with an incentive system, but that most help is not good enough. Some persons felt that when mills run at 24 a minute, they sacrifice on weight tolerances. One panel member said that mills can increase average speeds if they are not too worried about tolerances, that it is possible to get speed but that he has not seen rates average 20 bags a minute over an extended period. One member of the audience said he could average 20 bags a minute with a 1 oz. tolerance.

Regarding weight tolerances, Mr. Stohrer mentioned aiming for plus or minus 4 oz. Tolerances of plus or minus 2 oz. are claimed for some new equipment, he said.

In a discussion of gusset and straight tube bags, speakers mentioned that gusseted bags stack and handle better, have a better appearance, are better for palletizing, and that thread is saved in sewing because of a smaller face.

It was brought out that some mills pack molasses feeds in paper bags but that the feed must be cooled well; some panel members preferred textiles in order to get better ventilation.

Other points mentioned in the discussion: A colored rip cord can be used for quick-opening packages; in some cases a small cut in the bag is made so that it can be torn open. . . . Cotton thread was said to remain stronger than rayon. . . . Best conditions for storing paper bags are 70 to 72° temperature and relative humidity of 65%; where humidifiers are not available, moisture can be provided by drums of water with textile bag wicks or by valves in steam lines.

MOLASSES MIXING

(Continued from page 15)

not crimped products are used. For high protein concentrates, the agitator type mixer at 350-400 r.p.m. is usually used, Mr. Murray said. Making dairy feed with crimped products and pellets requires bins and feeders for the products to be measured into the end of the agitator mixer where 10-15% molasses is added so that these products are somewhat folded into the feed. For a more economical dairy feed, Mr. Murray said, up to 20% molasses is applied in an agitator type mixer where the feed will not be too finely ground.

He said that a set-up for a new mill which would cover most situations might include four bins above a molasses mixer for the dry feed, with an agitator type molasses mixer under the bins, and probably four additional bins for measurement of crimped and pellet products at the end of the agitator, which would drop the feed into a scale that would weigh 100 or 50-lb. bags at a good rate. Usually a paddle type conveyor is used for these feeds, he said. He said he did not like to bin molasses feeds, although up to certain amounts can be run straight through a packing bin from the line.

Retired Borden Co. Official Dies at 64

NEW YORK—Monte W. Sohn, director of Elsie Enterprises Division of the Borden Company's general advertising department until his retirement in 1952, died recently at the age of 64.

Mr. Sohn, who was a former newspaperman, trade journal editor and author, joined Borden's general advertising department in 1934. He played a prominent role in making Elsie the Cow trademark a familiar one in the U.S.

His widow and a daughter survive.

Cottonseed Oil Mill Built Near Memphis

MEMPHIS, TENN. — The Lake County Oil Mill has completed erection of a new solvent extraction plant for the processing of cottonseed and will be in operation with the new system on Nov. 14 at Tiptonville, Tenn., near Memphis.

The machinery and equipment purchased from the French Oil Mill Machinery Co. of Piqua, Ohio, was installed by their erecting engineer, G. R. Greenbank, assisted by E. M. Beatty, superintendent of the Lake County Oil Mill.

MORE BULK TANKS

CLEMSON, S.C.—Bulk tanks have replaced the old milk can on at least 15,000 dairy farms in the U.S. Most of this chore-saving change has taken place since 1951, the U.S. Department of Agriculture reports.

IT'S DRY!

KANDILASS

TRADE-MARK REG. U. S. PAT. OFF.

40% TOTAL SUGARS

SCIENTIFICALLY PROCESSED & DRIED

BLACKSTRAP MOLASSES

WILL NOT CAKE OR HARDEN

It is BLACKSTRAP MOLASSES dried on a carrier base, high in carbohydrates

FREE-FLOWING EASY-TO-MIX EASY-TO-HANDLE

The EASY—ECONOMICAL way to add MOLASSES to your feeds

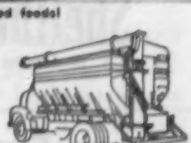
O. W. MEYER LABORATORIES NAPOLEON, OHIO

"NEW LEADER" Air-Unloading

BULKMASTER - makes all storage facilities more accessible!

Eliminates loading and unloading of bagged feeds!

1. Simple one-man operation with all controls located at the rear of unit for convenience of operator.
2. Rotary air blower and all drives are centrally located for balanced load distribution.
3. Body sides sloped for efficient flow of material and extra wide conveyor for lower center of gravity and assured faster unloading.
4. Low pressure blower provides the proper volume of air and guards against a separation of feed ingredients.
5. Rotary Air Blower mounted in front center of body prevents dirt, dust, grime, etc., from entering the air system.
6. For fast unloading into pits and elevators and simpler clean out, unit is equipped with special by-pass door.
7. Weatherproof steel top is recessed and streamlined. Makes loading easier and faster.
8. Unit is equipped with a safety torque release clutch on the rotary feeder.
9. Equipped with flexible, lightweight discharge hose.



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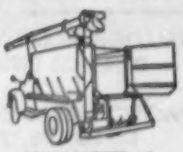

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Manufacturers of The World's Most Complete Line of Spreaders and Bulk Material Delivery Equipment

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HEDGE your soybeans, soybean oil and soybean oil meal in the futures market. It's the inexpensive way to take the risk out of your ingredients.

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WHEAT GERM
AGRI-TECH ALFALFA PRODUCTS

INQUIRIES APPRECIATED

ALGAE IN SEWAGE

(Continued from page 14

pellet. It tastes like strong, fresh lawn clippings.

"If you ate 40 pellets a day," grins Prof. Gotaas, "you'd have your entire daily ration of protein."

Potentialities "Terrific"

The World Health Organization has shown interest in the California experiment with an eye to relieving the world's malnutrition. By 1960 some 2.7 billion people will be clamoring for at least a minimum diet. At the present rate of increase, the world's 2.3 billion population will double in 69 years.

But our greatest benefit from "sewage farms" will not be in using algae for humans but for animals, Prof. Gotaas believes.

The potentialities are terrific. If California's sewage for a year were treated with algae, it would produce 300 tons of protein a day—a third of the protein requirements of all the state's cows. Nationwide, algal treatment could produce 4,000 tons of protein a day—a fifth of the total required by all the cattle in the U.S.

Nutrient Value

Experiments to determine the nutrient value of algae have been few. In Germany, rats fed algae gained as much as those fed milk. Charles R. Grau of the California department of poultry husbandry found that dried algae produced an average of 4.2% weight gain in chickens, as compared with 8% when chicks were fed an ideal protein mixture.

Mr. Oswald believes algal growth may someday be used by chicken ranchers to cut feed bills in half. Chicken manure could be dissolved in tanks seeded with algae. The algae would salvage the nutrients which would be fed to the chickens as protein supplement.

Prof. Gotaas sees the future of algae possible in sewage farms run by individual farmers, but more likely in large processing plants harvesting algae from sewage-disposal ponds.

Algae cultures in the tanks of the California field station have yielded harvests which, on a ton-per-acre projection, would average over 30 tons a year. Contrast this with the average 1953 yield of California field crops, which was only 1.5 tons a year (both yields on dry-weight basis). Then too, Richmond is often foggy. In sunny areas the algal yield rate may run up to 65 tons dry weight.

These rich yields, furthermore, might be obtained without using large areas of agricultural land. Tanks might be kept on unfertile soil, in swamp areas, or on barges floating at sea.

Prof. Gotaas, Mr. Oswald and Mr. Golueke believe algal growth will eventually become an economical source of protein.

The main bottleneck is harvesting —separating the algae from the

● Christie's Spizzerinktum New Hampshires, the strain that made the breed famous, is still looked up to today as the only source of pure, unadulterated New Hampshires in the country.

You'll find that Christie New Hampshire females are free of the dark whiskers and black pinfeathers that interfere with top market prices for your meat flocks. Continued breeding effort and constant improvement for egg production, hatchability, disease resistance and unexcelled nickability have made them the favorite choice for crossing with any of today's leading meat-type males.

CHRISTIE "WHITES"

Reports from broiler areas point up the fact that Christie's Granite Whites are turning in a terrific job in fast weight gains, excellent feed conversion and fine dressing-out qualities. Hatchability is high and flock owners report that the females have no equal for consistent high egg production, interior quality or large egg size.

Excellent nickability with Christie White Cornish males, or with any other well-known recessive or dominant white, full or part Cornish males.

N.H.-U.S. Approved, Pullorum Clean

FREE MANAGEMENT BOOKLET — Write for "Suggested Management and Feeding Practices," a "must" for every poultry raiser.

CHRISTIE POULTRY FARMS
"Home of Spizzerinktum"
BOX PS, KINGSTON, NEW HAMPSHIRE

NOW—do all Your Cleaning, Faster-Easier with the VERSATILE

Heavy Duty
TORNADO® VACUUM CLEANER
(4 CLEANING MACHINES IN 1)

You've never seen such outstanding vacuum performance until you've tried the Tornado Series "80" vacuum cleaner.

Suction speeds up to 325 M.P.H. pick up dirt or liquids without any conversion. Sealed ball bearing motor can't overheat even under continuous operation. Three sizes in ¾, 1 or 1½ H.P. Removable motor unit adapts to many other uses.

USE IT ALSO AS:

BURROWS
EQUIPMENT COMPANY
1316-BE Sherman Ave. Evanston, Ill.

water. The centrifuging done at Richmond might be uneconomical on a larger scale. One of the more likely methods is chemical precipitation.

"We're just now conducting extensive experiments on algae harvesting by coagulation," Prof. Gotaas says. "The results, so far, are quite promising. If algae can be produced for 5¢ lb., excluding the normal cost of waste treatment, the process will be economical in areas with a satisfactory climate."

Still experimental, sewage farms nevertheless stir the imagination—as the first food-producing process that can respond in direct proportion to the world's steady increase in population; as a source of water for arid areas; and as a remarkable use for three of the most plentiful things in the world—sunshine, waste and algae.

Portland, Ore., Firm Makes Purchase Plans

PORTLAND, ORE.—The Portland (Ore.) Seed Co. is negotiating for the purchase of the Chas. H. Lilly Co., Seattle. Purchase of the Lilly company, which began as a flour and grain company and is now in the seed and fertilizer business, would be a million dollar transaction.

It has been announced that C. F. Larsen, head of the Lilly company, will retire from the firm. The Portland Seed Co. is headed by Fred Trullinger, Sr., as president, and Fred Trullinger, Jr., general manager.

Purchase of the controlling interest in the Lilly company stock, subject to completion of details was confirmed by Fred Trullinger, Jr.

Minnesota 36% Linseed Meal

Manufacturers and dealers everywhere use Minnesota 36% meal or pellets. *Extra protein* sharpens appetites, boosts production. Wire, write or phone for latest quotes.

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Here's the answer to bigger feed sales

JAY BEE ALL-IN-ONE FEEDMAKER

A COMPLETE CUSTOM MILL ON WHEELS!

MAKES MORE FEED SALES ON THE FARM

Selling on the farm is the best way to build a dealer's business. It has been proved many times. JAY BEE All-in-One Feedmaker will help you get that business where the farmer has his own grain and roughage. It is a complete milling unit for high-capacity grinding, mixing and liquid molasses blending. Built to handle roughage on rugged 20-inch industrial type mill. Unique molasses heating system. Handle bulk or sacked. Fits standard two-ton truck.

GET CLOSE TO YOUR CUSTOMERS

Here is a JAY BEE All-in-One Feedmaker at work on a Tennessee farm. Service and feeding results are what build feed business today. Wise dealers now get a large percentage of their potential business by mobile service to farmers who have their own grain and roughage. The All-in-One Feedmaker does the job efficiently and profitably. Users like C. C. Morrow, Purina dealer of Columbia, Tenn., like the All-in-One Feedmaker. Mr. Morrow says: "We like our machinery very much. It really does the job in a hurry." Let us give you all the facts without obligation. Clip and mail coupon at right.

CLIP AND MAIL FOR FULL INFORMATION

J. B. SEDBERRY, INC., DEPT. F, FRANKLIN, TENN.

Please send me full information on the JAY BEE All-in-One Feedmaker.

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Classified Ads

Classified advertisements accepted until Wednesday each week for the issue of the following Saturday.
Rates: 10¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies.

Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.
All Want Ads cash with order.

HELP WANTED

WANTED—EXPERIENCED CHAIN STORE operator to set up retail stores for selling animal health products to farmers. All replies held in confidence. Ad No. 1253, Feedstuffs, Box 67, Minneapolis 1, Minn.

REPUTABLE OHIO GRAIN FIRM WANTS experienced man for merchandising grain and feed ingredients throughout Ohio and East. Excellent opportunity. Replies strictly confidential. Ad No. 1252, Feedstuffs, Box 67, Minneapolis 1, Minn.

WANTED—BY ONE OF THE NATION'S largest and oldest feed manufacturers, experienced formula feed salesman in Ohio. Opportunity for five figure income for right man. Must be between the ages of 28 and 45. Ad No. 1235, Feedstuffs, Box 67, Minneapolis 1, Minn.

PERMANENT SALES POSITION — NEW York state for experienced animal feed representative or man with agricultural background or animal husbandry degree. Excellent starting salary plus expenses—genuine opportunity to increase earnings. Replies held in strictest confidence. Ad No. 1251, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALES REPRESENTATIVES—ALERT, AGgressive sales representatives needed in several territories, including states of Minnesota, Wisconsin, Illinois, South Dakota, Kansas and Missouri. Nutritional background desirable. You will be contacting feeders, dealers and mixers selling well known feed supplements. Philip R. Park, Inc., Berth 42, Outer Harbor, San Pedro, Cal.

TOP CALIBER SALES ENGINEER OR salesman with feed machinery background to represent nationally known manufacturer of feed milling equipment. Two territories open in southeast and south central sections of country for a line of equipment which is the leader in its field, backed by an expanding, reputable firm. Position permanent, with top remuneration for qualified men. Address 890, Feedstuffs, Minneapolis 1, Minn.

TECHNICAL SERVICE REPRESENTATIVE —Excellent opportunity available for individual having animal nutrition training with basic producer of vitamins and antibiotics. Desire high caliber man with Masters or Ph.D. and experience in the feed trade. Remuneration in keeping with qualifications. Send qualifications, experience and if possible recent photo. All replies strictly confidential. Ad No. 1263, Feedstuffs, Box 67, Minneapolis 1, Minn.

TEXAS SALESMAN—WE ARE ONE OF the principal manufacturers in Texas with a progressive sales and merchandising program. We have an opening in a well established territory producing a good volume but are looking for a man capable of developing this territory even further. Salary, automobile and expenses with excellent opportunity for advancement. Ad No. 1262, Feedstuffs, 612 Board of Trade Bdg., Kansas City, Mo.

OPPORTUNITY

The leading machinery manufacturer supplying the feed milling industry NEEDS ONE MAN to complete sales organization. Outstanding compensation with unlimited future for man who has imagination, intelligence and ambition. Technical experience or education valuable, but not absolutely required. Write in strict confidence summarizing experience, education, income, etc. Enclose recent snapshot. Address 1227, Feedstuffs, Minneapolis 1, Minn.

MACHINERY WANTED

WANTED — 50 FOOT MOTOR TRUCK scale, 50-ton capacity. Must be in good condition. Alabama Feed Mills, Tuscaloosa, Ala.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

BABY CHICKS FOR SALE

BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

MACHINERY FOR SALE

FOR SALE—USED TEXAS CYCLINE AND Anglo-American Mixer. Wenger Mixer Mfg. Co., Sabetha, Kansas.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address 8774, Feedstuffs, Minneapolis 1, Minn.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

FOR SALE — FISCHBEIN MODEL "C" portable bag closer. In perfect condition. Used very little. $150. Knud Nielsen Co., Evergreen, Ala.

MOLASSES MIXERS AND BLENDERS for custom millers and commercial feed plants. Let us know your needs. Mill Equipment Sales, Hilladale, Mich.

WRITE US, WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

FOR SALE — ½ TON BURTON MIXER; one 5 Blue Streak Mill; one 16 Blue Streak Mill; one 22 Bryant Mill; one 18 Bryant Mill. Ray R. Fitzgerald, Janesville, Wis.

HAMMER MILL, JB; 25 H.P. DIRECT connected motor all on steel base, induction starter included. Mill and starter in excellent condition, motor needs some repair, $300 cash. 18' steel elevator complete, 8" buckets, like new, $75. Linden Mills, 3009 Westerville Rd., Columbus, Ohio.

FOR SALE—WENGER MOLASSES MIXER; 4,000 lb. vertical feed mixer; 20x24 flaking rolls; 36" double attrition mill; 2,000 lb. horizontal mixers; Richardson automatic scales; Union Special sewing machines; steel elevator legs; conveyors; motors; hammermills; pellet mills. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE—GRAIN HANDLING EQUIPment from closed brewery in Easton, Pa.: (2) steel grain bins—4,400 cu. ft. each—13' dia. x 33' high. (4) steel grain bins—2,050 cu. ft. ea.—9' 6" dia. x 29' high. (2) bucket elevators, approx. 50' high, with 8" x 4" x 4" steel buckets on 15" centers on 9" wide canvas belt in 7" x 10" steel casing. Approx. 120' steel screw conveyor 9" and 12" dia. Perry Equipment Corp., 1402 N. 6th St., Philadelphia 22, Pa.

Limited Quantity
REBUILT MOTORS
BOTH OPEN AND TOTALLY-ENCLOSED
all 220/440 Volt—60 Cycles—3-Phase
TOTALLY ENCLOSED AT LESS THAN NEW OPEN MOTOR PRICES

H.P.	1,800 R.P.M.	1,200 R.P.M.
1	$53.00	$62.00
2	71.00	82.00
3	82.00	97.00
5	97.00	126.00
7½	126.00	160.00
10	160.00	193.00
15	193.00	253.00
20	253.00	311.00
25	298.00	

STANDARD OPEN-TYPE MOTORS

H.P.	R.P.M. 3,600	R.P.M. 1,800	R.P.M. 1,200	R.P.M. 900
1	$47.00	$46.00	$53.00	
1½	49.00	53.00	63.00	
2	59.00	63.00	70.00	
3	70.00	70.00	83.00	$113.00
5		83.00	108.00	
10		137.00		
15			217.00	
20			266.00	
25		256.00	331.00	
30	290.00	293.00	379.00	
40	325.00	364.00	474.00	
50	431.00	436.00		
60	493.00	545.00		
75		653.00		
200	1000.00			

ALL STANDARD NEMA FRAMES
REBUILT—BALL BEARINGS—NEW MOTOR GUARANTEE
HAMMERMILLS
NEW & REBUILT (Guaranteed) AND USED (as is)
Many makes and models.
Also a complete line of Jay Bee and Bauer parts.
Write, wire or phone 2-4710 for further information and quotation.
The Lima Armature Works, Inc.
142 East Pearl St., Lima, Ohio
"Over 30 years of Continuous Service to the Feed and Milling Industry"

MACHINERY FOR SALE

WEIGH BUGGY'S. WE CAN SAVE YOU money. Write for bulletin. Mill Equipment Sales, Hilladale, Mich.

WHIRLAWAY AIRBLAST CAR LOADERS. J. E. Hagan Mill Machinery, Jefferson City, Mo.

PRICED TO SELL — NINE BY THIRTY Barnard & Lea's single stand modern all metal rolls, on the original skids, in perfect condition. Make us an offer. Ad No. 1238, Feedstuffs, Box 67, Minneapolis 1, Minn.

ROBINSON MFG. COMPANY UNIQUE ½ ton horizontal back-geared Batch-Mixer, size No. 6, deep round bottom tank, spiral ribbon and paddle agitators. Complete with Valley 5 H.P. A.C. motor, also starter, elevator legs and stand. A real bargain. Act quick. Maney Brothers Mill & Elevator Co., Minneapolis 4, Minn.

BUSINESS OPPORTUNITIES

FOR SALE—HARDWARE, FEED AND MAchinery business doing large volume. Dover Feed & Hardware Co., York County, Dover R.F.D. No. 3, Pa.

FOR SALE—MODERN FEED MILL, 80,000 bushel storage. Ample warehouse. Pellet and molasses mixer. Located Dayton, Ohio. Vitality Mills, Inc., 250 W. 87th St., Chicago 20, Ill.

FEED MILL FOR RENT OR LEASE, fully equipped, electrified 25 H.P. water wheel in good condition. Possession Dec. 1, 1955. E. B. Frey's Mill, Emmaus, R. 1, Pa.

FEED MILL AND RETAIL STORE LOcated in central Kansas, at edge of city on U. S. highway. Wonderful opportunity for owner operator or as a branch. Duane Cooper, Hutchinson, Kansas.

FOR SALE — LARGE 3-STORY BRICK building on rail siding. Formerly used as feed mill with bulk storage for 10 carloads. Ten thousand ft. floor space. Gravity unloading. Suitable for feed mill or warehouse and distributing for truck delivery. Separate office building and truck scales. Pine Run Farm Supply Co., Doylestown, Pa.

Contact—
MID-WEST BUSINESS EXCHANGE
When you want to Buy or Sell
ELEVATORS or FEED MILLS
Ohio - Indiana - Illinois
Excellent Opportunities
Halbert C. Smith Plymouth, Ind.

COMPLETE and MODERN FEED MILL
in the Willamette Valley in Oregon. Does over a quarter of a million dollars per year in Poultry, Dairy, Turkey & Hog feeds. Present management over 30 years. Reason for selling — getting old. Ad No. 1258, Feedstuffs, Box 67, Minneapolis 1, Minn.

Bryant
DOUBLE DUTY
HAMMERMILLS

Standard steel elevators, belt and bucket type, available from stock. Ten Heavy Duty sizes, from 300 to 10,000 Bu./Hr., for continuous service and four Light Duty sizes, from 110 to 750 Bu./Hr., for intermittent service. We also manufacture screw conveyors and hoppers. Send your requirements for complete information.
GODSHALK
Sheet Metal Fabricators
BANGOR, PA.

Use Feedstuffs WANT ADS for RESULTS

Oklahoma Project Nears Completion

RED ROCK, OKLA.—A new $110,000 feed and seed plant in Red Rock, Okla., will be completed in late December, according to an announcement by Bob Case, manager of the Red Rock Co-Operative Elevator.

The firm's feed mixing facilities will be expanded by the addition and many new services will be offered. A cleaner and treater department is located on one side of the plant and feed services, including a grinder, pellet maker, molasses mixer and steam crimper are available on the other side.

Drive-in facilities with overhead shelter are provided at both sides of the plant.

COST CONTROL

(Continued from page 10)

However, while some small plants have been dropping out, others are coming in and the small operators are just as willing as others to modernize and improve. Dr. Brensike said many small manufacturers have inherent locational, service and managerial advantages that make them a continuing part of the business. However, they must adopt modern practices, know their products well and serve the farmer well.

Cost Control Program—A good cost accounting system and a daily cost control program are very valuable in today's competitive market, said Lowell Judd, Albers Milling Co., Kansas City. Mr. Judd was ill at the time of the production school, and his paper was presented by Max Shields, Albers' Kansas City manager.

Mr. Judd described a cost control system which his company adopted some years ago. It provided, among other things, so that all charges (fixed and indirect and direct labor) could be charged to any commodity processed as it progressed through the mill—for example, the cost of produsing a ton of mash, covering receiving, grinding, mixing, sacking off, loading.

Labor code sheets were prepared, with a code number for any job, and this simplified reporting of labor for the various "systems" in a mill. Forms also were provided for reporting production. The whole plan provided a simplified procedure. This information, along with other data, is used to make labor cost comparisons.

Cost Data Provided

Each plant monthly gets a cost breakdown for each operation—for example, packing costs, broken down to different sizes and types of feed. However, for a good control system, daily figures are necessary, and these are provided for certain key operations—such as mixing, packing, shipping and receiving of various types or methods. These data are put on a daily standard cost form which shows: operation, total tons, total labor cost, actual cost per ton and standard cost per ton (a predetermined figure). This information is used to correct any problems.

While small operators can't have elaborate coding and standard cost systems, they can use simple methods. For example, one small firm determines the daily cost per ton by dividing total labor cost by total tons. This figure is plotted on a graph to show the over-all trend.

It is necessary to control indirect costs, too, such as maintenance supplies and indirect labor. The most practical method, Mr. Judd said, is through budgets for each item.

WHEN IN NEED
of sun-cured alfalfa and lespedeza meal—all grades and grinds; ground ear corn; also ground corn cobs, call
Miller Milling Service
Bowling Green, Ky., Route 3
Phone Woodburn, Ky., Jackson 9-3982

Mill Management, Working Through People, Holds Key to Success

When the superintendent, production manager or general manager fully recognizes that people are the key to his company's success, he will lead them in putting into action the things needed to produce superior products at lower costs. Then, and only then, can he say that his time at the production school was a profitable investment for his company. Then he will be putting to work what he has learned.

This thought was emphasized by James H. Burrell, James H. Burrell & Sons, Inc., St. Louis, in the concluding talk at the Midwest Production School—a talk which emphasized that management is the key to success in putting new knowledge to work through people. The whole program, he declared, was built around a few simple words—plan, select, promote, coordinate, organize, control, with one word which covers all the others, management.

Mr. Burrell's talk was one of a number dealing with the basic importance of management and people in efficient operations.

Questions Asked

Mr. Burrell posed and answered questions like these:

(1) Do you know what it costs your company to make a ton of mash, or pellets, or crumbles? Many companies do not know. (2) Does your company actually have inventory control? Few do have. (3) Do you know whether you can save $2 or $4 on cost of bags because you are buying sizes not suitable for your products? (4) Do you have a product control department? Many do not have. (5) Are you studying your operations daily to see how you can lower costs and improve products through automation? If not, you should. (6) Do you have a program for selecting and training all personnel? Only a few do have.

"The biggest obstacle in putting things learned to work," he said, "is you, your associates in managing positions and failure on your part to plan, organize and supervise people throughout the organization. A business does not seize opportunity or make mistakes, but people do."

Every industry is seriously short of well trained men, particularly at the junior or middle management levels, Mr. Burrell said. If a business is to succeed now, it must have an organized way to discover, train, promote, compensate, develop and retire members of the management group.

What to Do

What should managers do to improve their own performance and help develop others? Here are some things listed by Mr. Burrell: (1) See that managing people want to do things. (2) Executives should study subordinates and see what makes each tick. (3) A manager should be a good listener, ask questions, get all facts. (4) He should always give constructive criticism; people who shou'd be criticized shou'd be criticized in p r i v a t e; praise people publicly. (5) Be considerate, courteous, understanding. (6) Delegate responsibility and with it give authority to get the work done. (7) Give credit when it is due, not taking it when it shou'd be given. (8) Make requests known by suggestion; put them in writing where possible. (9) Set the style and pattern for others. (10) Reflect confidence in all your people. (11) Ask assistants and employees in key positions for opinions. (12) Be prompt to admit mistakes. (13) Provide guidance for supervisors. (14) Encourage men to take short courses, train themselves, attend business meetings, visit other plants. (15) Don't just run today's business today and not take time to think, plan, administer. (16) Rewards motivate interest, and should have a direct relationship to the job done and progress made.

Personnel Selection—In selection of personnel, clearly written job specifications are a necessity, said Dr. John L. Holmes, Iowa State College. Also important are application forms, interviews and various tests. Job specifications should spell out a worker's duties, educational and physical requirements, etc.

A completed application form will provide much information on the applicant's background, and an interview will add details. Statements often should be verified with former employers and others.

No one should go overboard on testing, Dr. Holmes said, but great improvements have been made in tests in recent years, and they can be very valuable in measuring three things—mental ability, other abilities and personality structure. The right kinds of tests for the various purposes should be used—such as different types of mental tests for different persons or jobs. In some cases, standardized tests may be used; in other cases, special tests should be prepared, but they then should be validated by checking them to see that they measure what they are supposed to.

Plugging the Leaks—Often top management will carefully control the budget on sales, advertising, research, management and ingredient quality, but will take only a second glance at production costs, said Jerry Karstens, Feed Age, Chicago, in a talk on "plugging the leaks." Profits which could be realized by more efficient production are being disregarded in too many plants.

Mr. Karstens cited examples of costly, wasteful operations which may be exceptions rather than the rule but which exist in some plants. For example, illustrating the problem of coordination between sales and production, there was the case of a feed manufacturer who had one salesman with a customer who bought a discontinued feed and in a special size pellet. The order consisted of two tons in 100-lb. burlaps. In addition to valuable production time lost, it was necessary to set all the feeders, change the pellet die and reset the molasses feeder, and along with that came such problems as a clogged up pellet mill. All costs of this batch, not including ingredients, were more than the price of the feed.

It is easy to talk about "plugging the leaks," Mr. Karstens said, but it requires constant attention. With the possible advent of complete automation, solutions to many problems may be found. Certainly, many feed men have obtained ideas from other industries and have indicated that costs can and will be reduced further.

In the baking industry some bakeries can now mix, bake, slice, wrap and put bread on the loading dock for fewer man hours per unit of weight than many feed plants can on livestock feed.

• • •

Management Looks At Quality Control

With the advent of antibiotics, hormones and other trace elements, quality control has taken on unusual importance, Oscar Straube, Pay Way Feed Mills, Kansas City, pointed out. Mr. Straube, whose production school topic was "Management Looks at Product Control," noted that the days of haphazard feeding and feed manufacturing are gone, that feed must be made accurately and uniformly for today's more efficient feeder.

The old line of ingredients, as well as new micro-ingredients, needs a close look, too, and men handling incoming materials must know ingredient standards. In some cases, the handling of important trace minerals still rests with low-rated job holders when the handling of all ingredients at the point of mixing should be rated to attract the best men.

Perhaps, Mr. Straube said, management has not realized the responsibility resulting from manufacture of the newer rations, and workers have not been advised properly of the importance of their work. Employees should be told of the changes made in feeds, the added risks brought by these changes, and the fact that every employee is responsible for quality control.

Poorly made products are expensive in many ways, including possible payments to uphappy feeders (even though most claims are shown to have resulted from causes other than the feed) and loss of good will. Some companies now have product insurance to protect dealers and the business, but the rates are high and most feel it is not necessary. While there is merit in insurance, no amount of it can take the place of proper preventive measures in the plant.

Mr. Straube urged discussion between management and supervision on quality control and how far foremen should go as supervisors of production. There should be a thorough understanding and a written policy.

Points to consider include overall quality control; inbound inspections; tolerances, if any, on ingredient quality, on formula changes; appearance of finished feed; color, granulation, size of pellets; records for protection in case of claim and as a guide for proper usage of materials. Other factors in a quality control program include clean packages, clean loading of trucks and cars, accurate weights and numbers of bags, etc.

It is the job of the feed production engineer to constantly look for better methods, but that job is not completed until an idea, with figures on saving and cost, has been sold to top management, or discarded as impractical.

SPECIALIZED SESSIONS—Panel discussions were one of the highlights of the recent Midwest Feed Production School in Kansas City. Special topics were covered in each of these sessions. Members of three of the panels are shown in the pictures above as they answered production men's questions. Left to right in the top picture are members of the panel covering ingredient blending—John Branch, Nutrena Mills, Kansas City; Larry Alley, Pay Way Feed Mills, Kansas City; Ted Stivers, milling engineer, Decatur, Ga., and William Brickson, Consumers Cooperative Assn., Kansas City, chairman. The picture in the center shows members of the materials handling panel—Hugh Scott, Screw Conveyor Corp., Hammond, Ind.; John Heimovics, J. B. Ehrsam & Sons Mfg. Co., chairman (Mr. Heimovics also spoke at the school on the new pilot mill at Kansas State College); Richard Sheehy, Quaker Oats Co., Chicago, and Dave Armstrong, Fuller Co., Kansas City. Members of the molasses panel are pictured in the bottom photo—Joe Wenger, Wenger Mixer Mfg. Co., Sabetha, Kansas; Guy Cooper, Jr., O. A. Cooper Co., Humboldt, Kansas, chairman; John Czarev, Czarev Milling Co., Independence, Mo., and Phil Murray, Pillsbury Mills, Inc., Clinton, Iowa.

Inventory Control System Pays Off

The cost of setting up and keeping records for an inventory control system is one of the best investments his company has made, said Erwin Wascher, Honeggers' & Co., Inc., Fairbury, Ill. He made this comment in a production school talk dealing with means of meeting the inventory "feast-or-famine" problem.

In an inventory control system, there are certain variations or special factors to consider—such as storage space, supplies of materials which cover longer periods than others, shipping time, some fluctuation in sales from week to week (usually not more than 20%), "laying in" of supplies in surplus periods to save on costs, quantity discounts, etc.

However, when the problems are carefully analyzed and procedures set up, there are five simple points in an inventory control system, Mr. Wascher said. These are: (1) Amount of ingredients used in a previous or like period compared with the period immediately ahead (last week's usage compared with anticipated usage for the coming week; (2) supplies on hand at present time; (3) supplies rolling or arriving; (4) amount of ingredients ordered out or purchased for immediate shipment; (5) amount of purchasing required to maintain inventory at proper level or to replace current usage.

Mr. Wascher explained that at his plant, representatives of production, traffic and purchasing, along with a secretary, meet every Monday morning for an hour to review ingredient and bag supplies, going over the procedure outlined above. Results of the conference are mimeographed by 2 p.m., and every point where action is required (purchase additional car, speed shipment, hold back shipment, etc.) is underscored. During the week, purchasing checks the underscored items to see that action is progressing.

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Grain Sorghums Disappearance Up; Stocks Set Record

WASHINGTON—Disappearance of grain sorghums continued a two-year upward trend last season. However, stocks in all positions on Oct. 1 were the largest of record and production this season is expected to be exceeded only by the record 1950 crop. These facts are contained in the semi-annual grain sorghum market summary issued in November by the U.S. Department of Agriculture.

Disappearance of grain sorghums last season totaled 85.1 million cwt. compared with 53 million in 1953-54 and 48 million in 1952-53. In the 1950-51 season disappearance amounted to 142.7 million cwt.

Industrial uses of grain sorghums at 4 6 million cwt. were nearly double those of the two previous seasons. Exports last season were the third largest of record and totaled 26 1 million cwt., 17.5 million more than in 1953-54 and 20.3 million above 1952-53.

Around 52 8 million cwt. remained for feed last season. This compares with 40.4 million cwt. in 1953-54 and 38.7 million in 1952-53.

Production of grain sorghums this season is currently estimated at 128 million cwt. (228.7 million bushels), 12% more than the 1954 crop of 114 3 million cwt. and exceeded only by the 1950 crop of 130.6 million cwt.

The indicated yield of 969 lb. per acre is 95 lb. less than last year and 61 lb. below the 10-year (1944-53) average. This year's large crop is attributed to the increased acreage for harvest as grain.

Carry-over stocks of grain sorghums on Oct. 1 totaled 41.5 million cwt. (74.1 million bushels). This compares with 12 3 million cwt. a year earlier, 4.1 million on Oct. 1, 1953, and is the largest of record.

The CCC had 1 9 million cwt. in its own bins as against 1.3 million a year earlier. About 93% of the current stocks were in off-farm positions, most of which was CCC-owned grain.

Based on the estimated production and carry-over stocks, supplies of grain sorghums for 1955-56 totaled 169.5 million cwt. This compares with 126.6 million cwt. for the 1954-55 season, 65.3 million for 1953-54, and is the largest of record.

Reflecting the record supplies, grain sorghum prices declined since May when they were at the season's high point. Farm prices in October averaged $1.63 cwt., the lowest since October, 1950, and compare with $1.67 in September and $2.14 in October, 1954.

Farmers placed 4.4 million cwt. of 1955-crop grain sorghums under price support through Sept. 15 this year compared with 7 million of the 1954 crop through the same date last year. The grain sorghums crop this season is supported at an average rate of $1.78 cwt. compared with $2.28 last season. Last season farmers placed 64 million cwt. of grain sorghums under price support compared with 25.5 million from the 1953 crop.

Farmers delivered around 61.5 million cwt. of the 1954 crop to the Commodity Credit Corp. compared with only 22.9 million from the 1953 crop. Sales of CCC-owned grain sorghums last season totaled 43 9 million cwt. of which 30 million were for export.

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CASTLE ROCK, MINN.—The main building of the Farmers Mill & Elevator Co. here was destroyed by fire. Lost also were 7,000 bu. of soybeans and grain but a structure containing 20,000 bu. soybeans was saved.

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HAMMOND BAG PARTY—Representatives of the various industries it serves in the Upper Midwest area were entertained recently by Hammond Bag & Paper Co., Inc. The informal cocktail and dinner party, arranged by J. O. Mickelson, district sales representative of the company in Minneapolis, was held at the Interlachen Country Club, Minneapolis. Assisting Mr. Mickelson as host were other officials of the company, including M. J. Davis, president, and M. E. Greiner, vice president and sales manager, both of Wellsburg, W. Va.; A. E. Weaver, manager of the company operations at Pine Bluff, Ark., and D. E. Tobey, district sales representative at Kansas City. In the photo, left to right, are Wilfred E. Lingren, Feedstuffs, Minneapolis; Mr. Davis; Leo S. Becker, McCabe Co., Minneapolis, and Clifford Olson and Ronald Edstrom, Glencoe (Minn.) Milling Co.

TURKEYS

(Coptinued from page 1)

merrily and the industry is just about busting at the seams to get started for all-out production in the coming year.

USDA Urges Caution

This situation puts the USDA in a strange light. Most of the USDA officials, normally buoyant sales-minded people now have assumed the role of caution, urging, "go slow—hold production within bounds—take lesson from experience." These admonitions are things that businessmen don't like to hear.

But facts and circumstance bear out USDA at this time in its words of caution.

USDA is not advising against profit-making. On the contrary, USDA officials are urging the turkey industry not to kill, in this case, the turkey which lays the golden eggs.

Over-all information gathered by USDA indicates that hatchery operations have been stimulated by firm forward demands for eggs, and poultry contract placements are running far ahead of last year. This optimism is in part provoked by the likelihood of favorable feeding relationships for the coming year with abnormally heavy supplies of virtually all of the feed ingredients.

It is difficult to overcome the basic arithmetic that the turkey producer sees in the future. With low feed grain and oilseed supplement prices he fancies a boom year, even if turkey prices do go lower at consumer checking counters next fall.

At USDA, however, there is no argument with the arithmetic of the situation. USDA merely brought this meeting of the turkey IAC about to cool off unwarranted enthusiasm.

The turkey industry, as well as the poultry industry, has been somewhat of an economic phenomenon, defying all and sundry guideposts but in the long run coming up on firm feet. It was hoped by industry leaders that recent experiences may have led to economic maturity, but now the building optimism of the turkey industry leads to doubt.

Ezra Taft Benson, secretary of agriculture, in commenting on the turkey IAC meeting this week said, in part, "The survey should not be viewed as a prediction of a larger crop of turkeys in 1956, it should be considered as a basis from which the turkey industry may yet make adjustments before completing its 1956 production programs."

Fails to See Competition

The bullish turkey industry is failing to see anything but favorable signs in the economic stars. It fails to reflect on the competitive situation with heavy production of beef and swine pressing for its share of the consumer dollar.

The turkey industry is in somewhat the same position as a contestant on the $64,000 question program. Last year the turkey industry hit the $32,000 jackpot. Now it is asked of the turkey industry—is it wise to press on for the uncertain $64,000 prize? USDA believes that it is the better part of wisdom to draw down profits now and revise production ideas slowly.

These admonitions are directed not only at the turkey industry by USDA but also at eager beavers in the feed industry who may sense a sales expansion program this coming year. Good advice might be—don't oversell your customer, he may be in the economic graveyard next year.

USDA lists the following membership of its turkey IAC committee:

J. Arza Adams, Pleasant Grove, Utah; Clem T. Thurnbeck, Norbest Turkey Growers Assn., Salt Lake City, Utah; Benjamin I. Brown, Producers' Distributing Agency, Inc., New York; Peter C. Crafts, Rosmoore Farms, Grasmer, N.H.; Herman Cahlberg, C. A. Swanson & Sons, Omaha, Neb.; O. E. Droege, Swift & Co., Chicago; E. D. Griffin, Allied Mills, Inc., Chicago; Hoyle Griffin, Monroe Processing Co., Monroe, N.C.; Roscoe Hill, Roscoe Hill Hatchery, Lincoln, Neb.; Chester C. Housh, East Point Turkeys, Elkton, Va.; Fred Hunt, Washington Cooperative Farmers Assn., Seattle; Ralph Janes, Janes Bar Nothing Ranch, Austin, Texas; Dwight Lifer, Lifer's Turkey Farm, Danville, Ohio; Alex Maul, Maul & Pollastrini, Fresno, Cal.; Graydon McCulley, McCulley Turkey Farm, Maple Plain, Minn.; D. W. Mertz, Mertz Turkey Farm, Northumberland, Pa.; W. H. Schwedler, Northwest Poultry & Dairy Products Co., Portland, Ore.; Frank Priebe, Priebe & Sons, Inc., Chicago; William C. Purdy, Jewel Food Stores, Chicago; J. D. Sykes, Ralston Purina Co., St. Louis; Ray Thompson, Thompson Bros. Hatchery, Ellsworth, Iowa; Arlo V. Turner, Grange Co., Modesto, Cal., and H. M. Stamper, F. M. Stamper Co., Moberly, Mo.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending:	Maine	Conn.	Penna.	Ind.	Ill.	Mo.	Del.	Md.
Sept. 10	634	454	540	612	163	464	1,123	1,098
Sept. 17	640	450	564	606	166	450	1,261	1,049
Sept. 24	691	446	562	609	130	483	1,203	1,019
Oct. 1	673	481	560	666	203	488	1,258	1,080
Oct. 8	712	502	568	608	204	461	1,331	1,141
Oct. 15	651	563	603	601	164	391	1,400	1,090
Oct. 22	676	562	582	685	174	376	1,426	1,172
Oct. 29	755	646	671	694	166	381	1,367	1,157
Nov. 5	764	577	625	771	130	438	1,295	1,109
Nov. 12	719	486	617	756	135	457	1,324	1,156

Week ending:	Va.	W. Va.	No. Car.	So. Car.	Ga.	Fla.	Ala.	Miss.
Sept. 10	1,127	273	1,231	186	2,246	189	1,042	648
Sept. 17	884	479	1,199	176	2,217	184	1,037	613
Sept. 24	1,037	468	1,193	166	2,122	168	1,061	704
Oct. 1	945	474	1,270	183	2,265	166	1,011	706
Oct. 8	987	478	1,160	220	2,324	152	1,002	704
Oct. 15	909	383	1,305	248	2,324	157	1,019	696
Oct. 22	936	394	1,218	223	2,532	179	1,036	757
Oct. 29	1,028	372	1,246	224	2,382	187	1,066	872
Nov. 5	1,026	536	1,291	224	2,166	196	1,143	865
Nov. 12	1,066	439	1,331	207	2,402	171	1,188	787

Week ending:	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1955	1954
Sept. 10	1,394	222	1,417	171	119	927	17,239	
Sept. 17	1,350	215	1,562	171	96	849	17,286	
Sept. 24	1,394	210	1,492	164	95	871	17,322	
Oct. 1	1,366	220	1,545	141	117	845	17,679	
Oct. 8	1,471	227	1,567	99	117	862	17,807	
Oct. 15	1,536	251	1,700	121	93	864	18,049	14,366
Oct. 22	1,544	282	1,705	162	68	796	18,476	14,222
Oct. 29	1,460	252	1,628	130	94	933	18,611	14,546
Nov. 5	1,496	210	1,745	140	98	921	18,556	14,732
Nov. 12	1,592	276	1,715	194	101	886	18,976	15,043

COMPARABLE 13 AREA TOTALS*—CHICKS PLACED (000's omitted)

	Oct. 8	Oct. 15	Oct. 22	Oct. 29	Nov. 5	Nov. 12
1955	14,196	14,305	14,719	14,915	14,978	14,866
1954	11,586	11,387	11,436	11,659	11,674	11,723

*Former reporting areas of Maine, Connecticut, Delmarva, Shenandoah Valley, Virginia-West Virginia, Alabama, North Carolina, Georgia, Texas, Florida, Mississippi, Indiana, California and Oregon.

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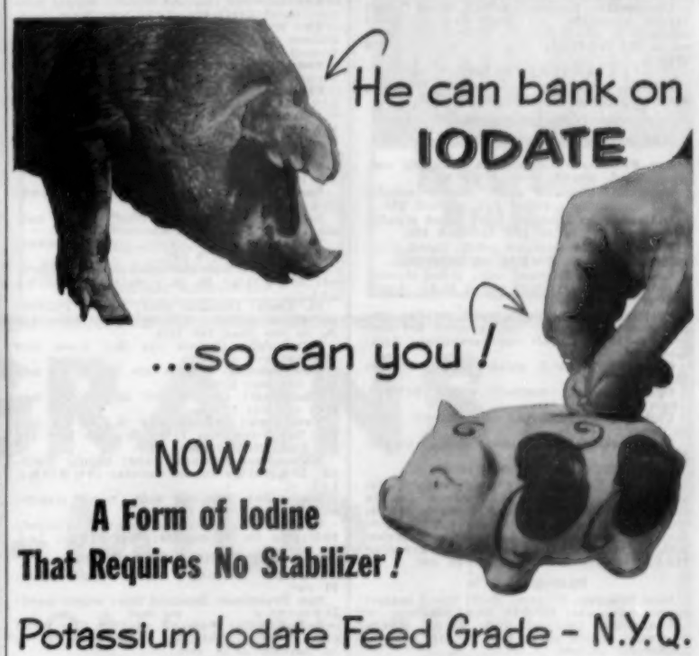

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THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Boston: Demand light; supply good; dehydrated, 17% $62; suncured 13%, Colorado $66.25, Dakota $60.75.

Portland: Demand slow; trend lower; supply ample; 15% suncured $46, delivered Portland; 15% suncured $46, delivered California; dehydrated $55, delivered California.

Indianapolis: Demand fair; trend steady; supply sufficient; 13% $42, 17% $58; suncured $40@45.

New Orleans: Demand slow; trend steady; supply adequate; $52.50@55 on 17% dehydrated with vitamin A guaranteed; non-guaranteed $51@55; 15% $47.50@49.

Philadelphia: Demand dull; supply fair; 17% dehydrated $62.

Los Angeles: Demand slow; supply ample; trend steady; 15% suncured $46@46.50; 17% dehydrated $50@51.50.

Minneapolis: Market about steady; demand limited. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $52 @56.50, granules and oil-treated $58.50; bulk, $3 ton less.

Buffalo: Demand and supply fair; trend steady to lower; $62, sacked, Boston.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A, papers or burlap $50; greased or granules, bulk $49.50; greased or granules, sacked $52.50; 17% dehydrated, non-A, papers or burlap $45; No. 1 fine ground suncured $40.

Seattle: Demand slow; trend easy; supply good; 15% protein suncured $46.50 ton, delivered, carlots; 136,000 A unit dehydrated $68 ton, delivered, carlots.

Kansas City: Little change in the market; demand fair to good; trend steady; 17% dehydrated alfalfa meal with 100,000 units of vitamin A guaranteed on arrival, blended $62, sacked, Kansas City; straight grade $47@48; no A guaranteed $42@44; suncured prices steady.

Ft. Worth: Demand fair; supply limited; 17% protein, 50,000 A $46, basis f.o.b. Plainview area; northern origin, 100,000 A $58.50@60.50, delivered Ft. Worth.

Chicago: Demand very slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $50@50.50; 17% with no A guaranteed $48@47.

Cincinnati: Demand poor; trend easy; supply adequate; 17% dehydrated, 100,000 vitamin A $56.55@61.05; 17% dehydrated, no A $52.55@57.05; 15% fine suncured $38 @50.

ALFALFA PELLETS

Omaha: Demand fair; supply ample; $47 bulk, $50 sacked.

BARLEY FEED

Boston: Demand slow; supply ample; $45.

San Francisco: Demand fair; supply ample; rolled $61.50, ground $60.50.

Portland: Demand good; supply ample; trend unchanged; rolled $58, ground $56.

Indianapolis: Demand fair; trend steady; supply ample; rolled $66, crimped $62.

New Orleans: Demand quiet; trend firm; supply adequate; $46@48 on pulverized.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $2.95, standard ground $2.85.

Seattle: Demand slow; trend steady; supply good; whole $57 ton, ground $57 ton, rolled $58 ton, all ex-warehouse, l.c.l., sacked.

Chicago: Demand quiet; supply ample; $35.

Ogden: Supply normal; rolled $44@49, whole $37@43.

Philadelphia: Demand and supply fair; pulverized $46.

Baltimore: Demand quiet; supply ample; $44.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate, f.o.b. Wyoming and South Dakota shipping points; granular, 30 mesh $15.50; fine granular, 80 to 100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Belle Fourche, S.D., minimum 20-ton carlot; 30 granular $12.50 net, 200 mesh fine $12.25 net.

BLOOD FLOUR

New Orleans: Demand slow; trend easier; supply adequate; $90@95, local plants.

Louisville: Demand dull; trend steady to weak; supply good; $85@90 ton, sacked, Louisville, carlots.

BLOOD MEAL

San Francisco: Demand slow; supply ample; $6.50 a unit of ammonia; screened $6.40 a unit of ammonia.

Portland: Demand good; supply ample; trend unchanged; $110.

Cincinnati: Demand fair; trend steady; supply adequate; $120.

New Orleans: Demand slow; trend easier; supply adequate; $90@95 local plants.

Los Angeles: Demand fair; trend steady; supply ample; $4.75@5 a unit of ammonia.

Louisville: Demand slow; trend steady to weak; supply good; $85@90 ton, sacked, carlots, Louisville.

Chicago: Demand slow; supply adequate; $120 ton, guaranteed 80% protein.

Ogden: Supply normal; $102.50 ton in 100-lb. bags, f.o.b. Ogden.

Seattle: Demand slow; trend easy; supply good; $90 ton, f.o.b. local packing plants, l.c.l.

BONE MEAL

San Francisco: Demand good; supply fair; $55.

Cincinnati: Demand fair; trend steady; supply adequate; $90 ton, sacked, f.o.b. Cincinnati.

Omaha: Demand good; supply limited; $85.

St. Paul: Market steady at $75 ton in large lots.

New Orleans: Demand fair; trend steady; supply sufficient; local $80@85; imported $57@58.

Ft. Worth: Demand fair; supply sufficient; $55, sacked, f.o.b. Ft. Worth, local manufacture.

Louisville: Demand poor; trend steady to weak; supply normal; $70@75 ton.

BONE MEAL (STEAMED)

Louisville: Demand dull; trend steady to weak; supply normal; $75@80 ton.

Boston: Demand quiet; supply light; $90, nominal.

San Francisco: Demand good; supply ample; $52.50.

Buffalo: Demand good; trend steady; supply ample; $85, sacked.

Seattle: Demand and trend steady; supply good; $85 ton, ex-warehouse, l.c.l.

Indianapolis: Demand fair; trend unchanged; supply sufficient; $32 ton, sacked.

New Orleans: Demand fair; trend firm; supply adequate; $80@85.

Los Angeles: Demand fair; trend steady; supply ample; domestic $89.50.

Ft. Worth: Demand fair; supply limited; best quality German production, 72% B.P.L., 14% phosphorus, 21% calcium $76, 100-lb. paper-lined burlaps, f.o.b. Houston.

Chicago: Demand slow; supply adequate; $65@75.

BREWERS DRIED GRAINS

Boston: Demand good; supply spotty; 26% $60@61.50.

Cincinnati: Demand fair; trend steady; supply adequate; $49@55.

New Orleans: Demand fair; trend steady; supply limited; 24% $50@51.

Milwaukee: Demand and supply fair; $48.

St. Louis: Demand good; trend firm; supply adequate; $42 ton bulk, $47 ton sacked.

Los Angeles: Demand steady; supply ample; trend firm; $54, f.o.b. Van Nuys.

Ft. Worth: Demand fair; supply very scarce; 24% nominal $50@57, prompt, delivered Ft. Worth.

Louisville: Demand fair; trend steady; supply ample; $50 ton.

Chicago: Demand fair; supply tightening, 24% $51.50@52.

Philadelphia: Demand dull; supply light; $60.

BREWERS DRIED YEAST

Boston: Demand light; supply steady; 11¢ lb.

San Francisco: Demand fair; supply good; 10½¢ lb.

Los Angeles: Demand good; supply ample; trend steady; 10½¢.

Buffalo: Demand slow; trend weaker; supply ample; $9.75 cwt.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ l.c.l.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢, l.c.l.

Louisville: Demand fair; trend steady; supply ample; 10¢ lb.

Chicago: Demand good; supply limited; 10@11¼¢ lb. in carlots; 10¾@12½¢, l.c.l.

BUTTERMILK-CONDENSED

Boston: Demand and supply fair; $4 cwt.

San Francisco: Demand fair; supply good; $5.35 cwt.

Indianapolis: Demand slightly off; trend steady; supply ample; $5-lb. drum $3.60; in barrels $2.60 cwt.

New Orleans: Demand fair; trend steady; supply adequate; $3.50@4.25 cwt.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drum $6.25; large barrels $4.60.

Louisville: Demand dull; trend steady; supply ample; $4.25 cwt., asked.

Chicago: Demand fair; supply steady; $3.25@3.50 cwt. in carlots.

Ogden: Supply normal; $4.15, 100-lb. drum.

Philadelphia: Demand moderate; supply fair; $4.25.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.62, flour $10.62.
Linscrest, N.J.: Crystals $9.50, flour $8.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.
Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.
Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.
Minneapolis: Plain $10; iodized (½ lb. KI per ton) $13.50; iodized-manganesed $15.05.
Chicago: Plain $8.55 ton in 100-lb. bags, delivered.

CHARCOAL

Boston: Demand slow; supply light; $95, nominal.
San Francisco: Demand steady; supply ample; $59.50.
New Orleans: Demand quiet; supply limited; trend steady; 40-lb. bags oak charcoal $2.40; 50-lb. bags poultry $2.55.
Los Angeles: Demand fair; trend steady; supply ample; poultry charcoal, oak, 40-lb. bags in ton lots $2.46.
Chicago: Demand quiet; supply limited; poultry charcoal $102 ton, in 50-lb. multiwalls.

COCONUT MEAL

San Francisco: Demand fair; supply ample; solvent $64.50.
Portland: Demand good; supply ample; trend unchanged; $75.
Seattle: Demand slow; trend firm; supply limited; $71 ton, ex-dock, 30-day shipment from Philippines.
Los Angeles: Demand fair; trend steady; supply ample; cake, ex-dock, November $71.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply good; 400 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.
Dayton: Trend steady; price per lb. in 55-gal. drums (410 lb.): 300 ICU, 1,500 A 19½¢, 2,250 A 20½¢, 3,000 A 21½¢; 600 ICU, 1,500 A 20½¢, f.o.b. Dayton.
New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 16@18¢, 1,500 A 17½@19½¢, 2,250 A 19@22¢, 3,000 A 19¼@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23½¢; f.o.b. Pennsylvania, New Jersey, New York or Massachusetts. Ranges include variance in offerings and f.o.b. shipping points.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; supply ample; trend steady; 5¢.
Boston: Demand active; supply fair; 4¢ lb.

CORN GERM MEAL

St. Louis: Demand slow; trend steady; supply limited; $42 ton bulk, $47 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $49.77, meal $65.77.
Atlanta: Feed $56.92, meal $72.92.
Birmingham: Feed $55.18, meal $71.18.
Boston: Feed $54.15, meal $70.15.
Chicago: Feed $44, meal $60.
Cleveland: Feed $51.04, meal $67.04.
Denver: Feed $55, meal $66.
Ft. Worth: Feed $51.50, meal $67.50.
Indianapolis: Feed $48.50, meal $64.50.
Kansas City: Feed $44, meal $60.
Louisville: Feed $50.11, meal $66.11.
New Orleans: Feed $52.88, meal $68.88.
New York: Feed $53.69, meal $69.69.
Norfolk: Feed $53, meal $69.
Philadelphia: Feed $53.23, meal $69.23.
Pittsburgh: Feed $51.50, meal $67.50.
St. Louis: Feed $44, meal $60.

CORN OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; $51.85@52.85.
New Orleans: Demand poor; supply adequate; trend steady; $57.85@59.85.
Louisville: Demand dull; trend steady; supply normal; $51.81 ton.

COTTONSEED OIL MEAL

Boston: Demand slow; supply good; $68 @68.50.
San Francisco: Demand good; supply ample; expeller $68.50, solvent $66.
Portland: Demand slow; trend lower; supply ample; $63, f.o.b. Los Angeles.
Cincinnati: Demand fair; trend easy; supply adequate; $60.50@63.
Indianapolis: Demand light; trend lower; supply plentiful; $65, 41%, sacked.
New Orleans: Demand slow; trend steady; supply plentiful; 41% old process $69@71.
Los Angeles: Demand fair; trend steady; supply ample; $62@64.
Kansas City: Little change in the market with demand fair and offerings adequate; $53@53.50, sacked, Memphis.
Ft. Worth: Demand improved; supply adequate; carlots, sacked, central and north Texas origin, 41% old process $60@62, solvent, 41% new process, fat added $58@59, delivered Ft. Worth; pellets $2 additional.
Louisville: Demand slow; trend fairly steady; supply ample; new process $59.05 ton; old process $62.05.
Chicago: Demand slow; supply plentiful; hydraulic $62@62.50; solvent $60@60.50.
Ogden: Supply normal; 41% $78@83.
Philadelphia: Demand and supply fair; $66.
Seattle: Demand fair; trend steady; supply ample; $78 ton, delivered, carlots, 41% protein expeller process.
Wichita: Demand slow; supply sufficient; 41% $63.
Memphis: Demand fair; trend firmer; supply adequate; prime 41% protein, old process $62.50, sacked; new process, 41% solvent $60, sacked.
Atlanta: Demand slow; trend steady; supply ample; 41% $58, sacked, immediate.

A AND D FEEDING OIL

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 19¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.
Chicago: Demand fair to good; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 9@10¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago; drums included.
Milwaukee: Demand and supply fair; 88 D, 100 A 13¢; concentrated vitamin oils, 300 D, 750 A 19¢; 300 D, 1,500 A 21¢; 300 D, 2,250 A 23¢.
Buffalo: Demand steady; supply adequate; 300 D, 750 A 18½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 2,250 A 23½¢ lb.; 300 D, 3,000 A 26½¢ lb.; 600 D, 4,000 A 31¢ lb.; straight vitamin A feeding oil 10½@13½¢ per M. U., drum lots, drums included, basis Buffalo.
Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.
New York: Trend steady; price per lb. in 55-gal. drums (400-420 lb.): 300 ICU, 750 A 13½@17¢, 1,500 A 15½@19¼¢, 2,250 A 17½@21½¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@20¾¢, 2,250 A 18@19¼¢, 3,000 A 20@25¢; f.o.b. New York, New Jersey, Massachusetts or Pennsylvania. Ranges include variance in offerings and f.o.b. shipping points.
Dayton: Trend steady; price per lb. in 55-gal. drums (410 lb.): 300 ICU, 750 A 18¢; 1,500 A 21¢, f.o.b. Dayton.
Minneapolis: All with DFPD—10,000 A 22¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 16¢ lb.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand slow; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.
Kansas City: Demand light; trend steady; supply adequate; 10½@11¢ lb.
New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 10@13.5¢ bagged, 11@12¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums, f.o.b. New York and New Jersey.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $69.50.
Wales, Tenn.: $62.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 24%, maximum fluorine .12% $56 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $54 in bulk; minimum phosphorus 14.5%, minimum calcium 24%, maximum fluorine 0.145% $48 net ton, f.o.b. Coronet, in 100-lb. multiwall bags, $46 in bulk.

DICALCIUM PHOSPHATE

Portland: Demand good; supply ample; trend unchanged; $98.
Cincinnati: 18% phosphorus $78@81.50.
Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $82.99 ton, delivered; $8 ton less in bulk.
Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $84, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $74, f.o.b. Trenton in 100-lb. multiwall bags.
East St. Louis: Monocalcium or dicalcium phosphate, 18½% phosphorus $74 ton, bagged, f.o.b. cars.
Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.
Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.
Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $74. Freight equalized with closest dicalcium phosphate producing point, carload basis.
St. Louis: Minimum phosphorus 18¼%, maximum fluorine .01% guaranteed $74, f.o.b. St. Louis in 100-lb. multiwall bags.
Chicago: Demand fair; supply adequate; stock feed grade, 18.5% phosphorus, 20,000 lb. or more $74 net ton in 100-lb. papers, basis Chicago Heights, Ill.; less than 20,000 lb. $79 net ton; 21% phosphorus 20,000 lb. or more $84 net ton, basis Chicago Heights and Nashville, Tenn., less than 20,000 lb. $89 net ton.

DISTILLERS DRIED GRAINS

Philadelphia: Demand dull; supply light; $57.
Boston: Demand slow; supply good; domestic, light $67.75, dark $69.75; Canadian, medium $57.75.
Cincinnati: Demand fair; trend steady to easy; supply adequate; $63@65.
Louisville: Demand good; trend steady; supply ample; bourbon light grains $51 ton, dark $53, solubles $30.
San Francisco: Demand fair; supply ample; $57.50; solubles $30.

DRIED BEET PULP

San Francisco: Demand good; supply fair; $48.96.
Cincinnati: Demand and supply fair; trend steady; $61@63.
New Orleans: Demand good; trend firm; supply limited; $59@60.
Atlanta: Demand fair; trend steady; supply limited; $74.50, sacked, immediate.
Milwaukee: Demand and supply fair; $60 @61.
Buffalo: Demand fair; trend steady; supply poor; $68, sacked, Boston.
Seattle: Demand and supply good; trend steady; $56 ton, delivered, carlots.
Boston: Demand active; supply adequate; $67@68, 100-lb. burlaps.
Los Angeles: Demand steady; supply ample; trend firm; $56.47, paper bags.
Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $65@66, delivered Ft. Worth, November-December shipment.
Ogden: Supply normal; $45@50.

DRIED BUTTERMILK

Boston: Demand fair; supply scarce; 11½¢ lb.
San Francisco: Demand fair; supply ample; $13.75.
Indianapolis: Demand fair; trend unchanged; supply normal; $11.50, sacked.
New Orleans: Demand fair; trend easier; supply adequate; $11.25@11.50.
Los Angeles: Demand good; supply light; trend steady; $13.75@14.
Wichita: Demand slow; supply adequate; $8.25 cwt.
Milwaukee: Demand good; supply fair; 11½@12¢.
Buffalo: Demand good; trend steady; supply limited; $11.80 cwt.
Ft. Worth: Demand fair; supply extremely limited; local production $12 cwt., f.o.b. Ft. Worth.
Minneapolis: Market steady at $10@ 10.50 cwt.
Louisville: Demand fair; trend steady; supply ample; $10.50@11 cwt.
Chicago: Demand steady; supply light; $10.25@10.50 cwt. in carlots.
Ogden: Supply average; $8.65, 100-lb. bag.

DRIED CITRUS PULP

San Francisco: Demand good; supply fair; meal $55.
Atlanta: Demand fair; supplies limited; trend steady; pulp $49, meal $46.50, sacked, immediate.
Los Angeles: Demand active; supply ample; trend steady; f.o.b. southern California

producers' plants: orange $48 sacked, $43 bulk.

New Orleans: Demand good; supply limited; trend steady; $56@57.50.

DRIED SKIM MILK

Philadelphia: Demand moderate; supply light; $12.50@13, nominal.

Boston: Demand fair; supply ample; 12@12½¢ lb.

San Francisco: Demand and supply fair; 13½¢ lb.

Minneapolis: Market steady at $11.50@12 cwt.

Milwaukee: Demand good; supply fair; 13½@14¢.

Buffalo: Demand fair; trend steady; supply ample; $12.50 cwt.

Portland: Demand good; supply ample; trend unchanged; $12.50.

Cincinnati: Demand fair; trend steady; supply adequate; 11½@12½¢.

New Orleans: Demand fair; trend steady; supply adequate; $11.50@12.50 cwt.

Los Angeles: Demand fair; trend steady; supply ample; $12.50.

Louisville: Demand fair; trend steady; supply ample; $12@12.25 cwt.

Chicago: Demand steady; supply light; $11.75@12 cwt. in carlots.

DRIED WHEY

Boston: Demand poor; supply plentiful; 6¢ lb.

San Francisco: Demand steady; supply good; $6 cwt.

Portland: Demand good; supply ample; trend unchanged $6.50.

Cincinnati: Demand fair; trend steady supply adequate; $6.

New Orleans: Demand fair; trend steady; supply adequate; $6.50@7 cwt.

Los Angeles: Demand fair; trend steady; supply ample; fortified $6.15, unfortified $6.

Kansas City: Demand fair; trend steady; supply fair; straight grade $6 cwt.; partially delactosed $6.50.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse Ft. Worth.

Louisville: Demand fair; trend steady; supply ample; $6@6.50 cwt.

Chicago: Demand fair; supply adequate; $8 cwt. in carlots.

Ogden: Supply normal; $6.90, 100-lb. bag.

Philadelphia: Demand moderate; supply fair; $6.25.

Seattle: Demand steady; supply good; trend unchanged; $7 cwt., ex-warehouse, L.c.l.

FISH MEAL

Ogden: Supply normal; $3.20 a unit, f.o.b. Coast; 66% $171@173.

Chicago: Demand easy; supply limited; menhaden fish meal, 60% protein, f.o.b. East Coast $155@157 ton; 60% blended West Coast $143@146; Northwest herring-salmon blend $143@146; herring meal 72% protein $2.35@2.40 a unit of protein.

Louisville: Demand fair; trend easy; supply ample; $160@165 ton.

Ft. Worth: Demand good; reduced offerings; Angola, 60% $156, f.o.b. cars or trucks Houston, last half November, sacked, 100-lb. burlaps.

Seattle: Demand slack; trend steady; supply improving; Canadian herring meal $2.50 a unit protein; blended and salmon meal $2.40 a unit protein.

Atlanta: Demand fair; trend strong; supply limited; 60% $166 ton, sacked, immediate.

Buffalo: Demand good; trend higher; supply very scarce; $162 ton, bulk; $165, sacked.

Minneapolis: Market steady to easier; 60% $160@162, Minneapolis; 76% $2.30@2.40 a unit of protein, West Coast.

Los Angeles: Demand limiter; larger of-

Los Angeles: Demand limited; larger of-

New Orleans: Demand good; trend higher; supply scarce; 60% $154@162.

Indianapolis: Demand good; trend steady; supply normal; $172 ton, sacked.

Cincinnati: Demand good; trend steady; supply fair; $160@170.

Portland: Demand slow; supply limited; trend unchanged; $2.40, f.o.b. Vancouver; $2.50, f.o.b. California.

San Francisco: Demand slow; supply ample; $2.35 a unit of protein.

Boston: Demand good; supply short; $153 @155.

HAY

Boston: Demand steady; supply plentiful; No. 1 timothy $38@40, No. 2 $35.

Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy (new) $31; first cutting No. 1 alfalfa (new) $21, second cutting $25; fancy No. 1 clover and timothy mixed $27; No. 1 red clover $23; bright wheat or oat straw $14.

New Orleans: Demand dull; trend steady; supply adequate; timothy and clover $28@30, baled alfalfa $30@34, prairie $23@26.

Los Angeles: Demand slacking; trend weaker; supply ample; U.S. No. 1 $36@36.50; U.S. No. 2 leafy $33@35; U.S. No. 2 green $33@34; U.S. No. 2 $30@32.

Ft. Worth: Demand fair for alfalfa, slow for others; supply plentiful; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $28@30; Johnson grass No. 2 $26@28; delivered.

Louisville: Demand dull; trend weak; supply heavy; good hay, alfalfa, clover, timothy and clover and timothy mixed offered at around $20 or a bit above, lespedeza $18@20; straw $14 or lower.

Ogden: Supply normal; $1.25 bale; $24@30 ton in the barn.

St. Louis: Demand fair; trend firm; supply ample; No. 1 timothy $25@28 ton; No. 1 clover $18@20 ton; No. 1 prairie $23@25 ton; No. 1 alfalfa $20@28 ton; straw $13 @14 ton.

Buffalo: Demand steady; No. 2 timothy $18@20; No. 2 alfalfa $26@28; straw $10 @14.

Seattle: Demand and supply good; trend firm; $37 ton, delivered, truck lots for U.S. No. 2 green.

Wichita: Demand fair; supply plentiful; prairie $18@22, alfalfa $25@30.

New York: Demand fair; trend stronger; supply sufficient; No. 1 timothy $39@42, No. 2 $32@37, No. 3 $26@29. Canadian offerings lessened in pressure during the last ten days, with stiffening in prices for domestic timothy. Only a slight increase in demand was noted.

Philadelphia: Demand and supply fair; as to quality $32.

HOMINY FEED

Boston: Demand slow; supply plentiful; $47, bulk.

Cincinnati: Demand very poor; trend lower; supply adequate; $43@44.

Indianapolis: Demand fairly good; trend unchanged; supply sufficient; $46 ton, including state tags and used bags.

New Orleans: Demand fair; trend weak; supply adequate; $47@50.

Seattle: Demand fair; trend steady; supply ample; $58 ton, delivered, carlots, sacked.

Memphis: Demand poor; trend lower; supply ample; white $44, yellow $47.

Buffalo: Demand and supply fair; trend steady to lower; $47, bulk, Boston.

Kansas City: Supplies light; demand fair; trend unchanged; nominally $43, Kansas City.

Louisville: Demand dull; trend easy; supply ample; $44.20.

Chicago: Demand slow; supply adequate; $51.

LINSEED OIL MEAL

Philadelphia: Demand and supply fair; 34% $80.

Chicago: Sales were slow during the week ending Nov. 16. An upturn in feed business would probably stimulate sales. Quotations Nov. 16: solvent linseed oil meal $70.50@71, expeller $73@75.

Louisville: Demand fair; trend steady; supply ample; new process $77.85; old process $83.85.

Ft. Worth: Demand slow; supply light; carlots, 36% or better $83.32 November-December, $81.32 January, $80.32 February-April, delivered Ft. Worth; pellets $2.50 premium.

Wichita: Demand fair; supply sufficient; 34% $80.

Omaha: Demand fair; supply adequate; 34% expeller $79, pellets $81.50; 36% solvent $74.50, pellets $77.

Milwaukee: Demand and supply fair; 34% $75, 36% $76.

Minneapolis: Market steady; demand fair, with shipping directions reported good by crushers and nearby production well sold up. Quotations: 36% $61@62, bulk, Minneapolis; 22% flaxseed screenings oil feed $44.50, same basis.

Seattle: Demand slack; trend steady; supply good; 34% solvent process $58 ton, delivered, carlots; 30% expeller process $62 ton, ex-dock, domestic.

Los Angeles: Demand slow; trend steady; supply ample; $63@64.

New Orleans: Demand slow; trend easier; supply ample; 32% or higher $80.50@83.

Indianapolis: Demand fair; trend strong; supply ample; new process $78 ton; pellets $75 ton.

Cincinnati: Demand and supply fair; trend steady; $76@80.

Portland: Demand slow; supply ample; trend unchanged; $64, f.o.b. Los Angeles.

San Francisco: Demand and supply fair; $70.

Boston: Demand slow; supply scarce; $80.

MALT SPROUTS

Cincinnati: Demand fair; trend lower; supply adequate; No. 1 $48.50@49.50.

New Orleans: Demand fair; trend steady; supply adequate; $44@49.

Milwaukee: Demand and supply fair; $42.

St. Louis: Demand good; trend firm; supply ample; No. 1 bulk $35 ton, No. 1 sacked $41 ton, No. 2 sacked $32 ton.

Chicago: Demand improved; supply scarce; No. 1 $43@43.50.

MEAT SCRAPS

Boston: Demand fair; supply steady; $1.10 a protein unit; converted 50% $67.50.

San Francisco: Demand fair; supply good; $1.55 a unit of protein.

Portland: Demand slow; supply ample; trend unchanged; $1.40.

Cincinnati: Demand good; trend easy; supply fair; $69.50 ton, sacked, f.o.b. Cincinnati.

Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $67.50 ton, bulk; $70, sacked.

Omaha: Demand good; supply ample; $80.

St. Paul: Market steady to easier; supplies good; demand fair; 50% meat and bone scraps $73.

Seattle: Demand slow; trend easy; supply ample; $70 ton, ex-warehouse, truck lots, 50% protein.

Wichita: Demand fair; supply sufficient; 50% $80, f.o.b. plant; 55%, no quotations, no offerings.

New York: Demand good; trend steady; supply sufficient; 50% $67.50, 55% $72.50 bulk; 50% $70, 55% $75 sacked.

New Orleans: Demand fair; trend firm; supply ample; 50% meat and bone $78 @80.

Los Angeles: Demand fair; trend steady; supply ample; $1.65 a unit of protein.

Kansas City: Demand moderate; trend easy; offerings adequate; 50% meat and bone scraps $70@75, sacked, Kansas City.

Ft. Worth: Demand slow; supply ample; meat and bone, 50% $67.50@70, sacked, f.o.b. or delivered Ft. Worth.

Louisville: Demand dull; trend weak; supply heavy; $75@80 ton.

Chicago: Demand slow; supply adequate; 50% protein $65@75; 55% $82.

Ogden: Supply normal; $82.50, ton, in 100-lb. bags.

MILLET

St. Louis: Demand fair; trend steady; supply ample; recleaned Early Fortune $3.50 cwt., sacked; recleaned White Proso $3.75 @4 cwt., sacked.

MILLFEED

Minneapolis: Market steady; demand limited; quotations: bran $38@38.50, standard midds. $39@39.50, flour midds. $48@ 48.50, red dog $50@52.

Kansas City: Colder weather and lighter flour production has led to improvement in the price for millfeed; demand fairly active; quotations, Nov. 16: bran $36.25@ 36.75; shorts $40@40.50, sacked, Kansas City.

Omaha: Demand good; supply adequate; bran $36.75, shorts $40.50; standard midds., bulk $37.50@37.75.

Ft. Worth: Demand improved, fair; supply adequate; carlots, burlaps, prompt, wheat bran $43@44; gray shorts $45.50@ 46.50, delivered TCP; unchanged both bran and shorts compared with a week previous.

Wichita: Demand good; supply inadequate; basis Kansas City, Nov. 15: bran $36.25@36.75, shorts $39.75@40.25; prices on bran were unchanged to 25¢ ton higher, while shorts advanced 75¢ ton, compared with the preceding week.

Chicago: Millfeeds were slow during the week ending Nov. 16. Prices dipped slightly as demand slacked off. Flour mills were not offering millfeeds as abundantly as in the past, and this stimulated little interest. Quotations Nov. 16: bran $41, standard midds. $41@41.50, flour midds. $52@53, red dog $53@54.

Cincinnati: Demand fair; trend steady to lower; supply adequate; bran $46@46.50; middlings $46@47.50.

Indianapolis: Demand fair; trend unchanged; supply sufficient; soft winter wheat bran $49; standard midds. $49.50; mixed feed $49; gray shorts $52.

Louisville: Demand fair; trend fairly steady; supply ample; bran $47.90; mixed feed $49.40; shorts $48.30; standard midds. $48.35.

Buffalo: Millfeed sales again were slow last week. The East still has an over supply and prices were forced lower. Medium and large mixer buying continues meager and on a spot basis. The country trade is price conscious and buys only when levels are attractive. The cheapness of corn is cutting into middling sales. Bran ended $2.50 lower after being down $3 earlier in the week. Middlings were off $2 and heavy feeds were down $0@$1. Quotations Nov. 16: bran $41.50@42.25, standard midds. $42.50 @43.50, flour midds. $53@53.75, red dog $53@54.

New York: Demand fair; trend stronger; supply sufficient; bran $48.75@49.50, standard midds. $49.75@51; demand is expected to strengthen shortly due to seasonal weather factors.

Philadelphia: Demand spotty; supply am-

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ple; bran $49.50, standard midds. $51, red dog $62.

Boston: Demand cautious; supply adequate; bran $49.90; middlings $51.40.

New Orleans: Demand fair; supply adequate; trend stronger; bran $45@45.75; shorts $49@49.50.

Seattle: Demand slow; trend steady; supply good; $45 ton, delivered, common transit points, carlots.

Portland: Demand good; supply ample; trend unchanged; $45.

San Francisco: Demand fair; supply ample; $50.50; red bran $54.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $43, middlings $48; to Denver: red bran and mill run $50, middlings $56; to California: red bran and mill run $50.50, middlings $55.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Demand fair; trend steady; supply ample; mill run, Utah-Idaho billing, $52@52.50; red bran, delivered CCF, sacked $54.

MINERAL FEED

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Portland: Demand good; supply ample; trend unchanged; $32.

Seattle: Demand steady; supply good; trend unchanged; high phosphorus mixtures $65 ton; competitive brands $44 ton.

Wichita: Demand good; supply about offsets demand; all-purpose with iodine, 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.

Indianapolis: Demand good; trend unchanged; supply ample; $43 ton with iodine.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Ft. Worth: Demand fair; supply ample; all-purpose granules $80, block $90, mineral phosphorus 6% $93, block $103; cattle-sheep mineral, 7% phosphorus granules $90, block $99; hog mineral phosphorus 3¼% granules $81, phosphorus 2% $55 (all in 50-lb. paper bags).

Ogden: Supply normal; $105 ton, 50-lb. blocks; $95 ton, granular, 50-lb. bags.

MOLASSES

Boston: Demand fair; supply adequate; immediate 13¢ gal. in tank cars; forward commitments 14¢.

San Francisco: Demand and supply good; $23 ton, f.o.b. cars Richmond, Cal.

Portland: Demand good; supply ample; $23.

Cincinnati: Demand fair; trend steady; supply adequate; 10@10¼¢ gal., New Orleans.

Atlanta: Citrus molasses—demand fair; supplies limited; trend steady; $19 ton, f.o.b. Florida producing points, immediate.

Buffalo: Demand and supply good; trend steady; 14¢ gal., f.o.b. Albany.

Indianapolis: Demand good; trend steady; supply ample; 10¼¢ gal., tank car lots, f.o.b. Gulf ports.

Minneapolis: Market steady; demand fair; 10¼@10¼¢ gal., f.o.b. New Orleans; $23 ton, West Coast.

Seattle: Demand steady; supply good; $23 ton, f.o.b. Seattle, tank car lots.

New York: Trend steady; blackstrap 12½¢ gal. in tank cars, tank wagons, f.o.b.

Beaumont: Trend steady; blackstrap 11¢ gal., tank cars and tank wagons, f.o.b.

New Orleans: Demand fair to slow; trend steady; supply adequate; 10¼¢ gal. in tank cars, f.o.b. New Orleans.

Los Angeles: Demand fair; trend steady; supply ample; $23, f.o.b. tank cars; $23.25, f.o.b. tank trucks, both Los Angeles harbor.

Kansas City: Slightly stronger trend by about ¼¢ this week; demand fair and improving; 10¼@10¾¢ gal., New Orleans for nearby shipment.

Ft. Worth: Demand fair; supply ample; blackstrap, 12¢ gal., f.o.b. Houston; carlots, delivered Ft. Worth, cars and/or truck $27.52, seller's market price on date of shipment; maximum 13¢, November-December shipment.

Louisville: Demand fair; trend stronger; supply ample; priced at 10¾¢ gal., tank car lots, f.o.b. Gulf ports.

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	Nov. 11	Nov. 14	Nov. 15	Nov. 16	Nov. 17
December	45.75@46.00	45.75@46.50	45.00@45.25	....@45.75	46.15@46.25
March	46.00@46.25	46.00@46.50	45.75@46.00	46.00@46.25	46.15@46.50
January	46.00@46.25	45.80@46.50	45.25@45.75	....@46.00	46.15@46.20
May	46.10@46.50	46.25@47.00	45.75@46.50	45.75@46.25	46.00@46.50
July	46.00@46.50	46.25@47.00	46.00@46.50	46.00@46.75	46.00@46.75
October	45.75@46.75	45.50@47.00	45.50@46.50	46.00@46.50	46.00@46.75

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	Nov. 11	Nov. 13	Nov. 15	Nov. 16	Nov. 17
December	....@50.50	....@49.95	....@49.50	49.15@49.25	....@49.25
January	51.25@51.40	50.65@50.75	....@50.25	....@50.10	50.00@50.10
March	52.30@52.35	51.80@51.85	51.40@51.45	51.10@51.25	....@51.00
May	....@53.00	52.45@52.50	....@52.25	51.90@52.10	51.85@51.90
July	52.85@53.00	....@52.35	....@52.05	51.75@51.90	51.75@51.80
August	52.80@52.95	52.20@52.30	....@52.00	51.75@51.85	....@51.64
September	....@....	....@....	....@....	....@....	....@50.50

MEMPHIS (unrestricted)

	Nov. 11	Nov. 14	Nov. 15	Nov. 16	Nov. 17
December	50.55@53.35	....@49.90	....@49.25	....@49.15	49.00@49.05
March	52.05@52.25	....@51.75	51.20@51.40	....@51.15	51.00@51.25
May	52.75@52.85	....@52.45	52.00@52.10	51.80@51.90	51.65@51.80
July	52.75@53.00	....@52.35	....@52.00	....@51.75	51.50@51.65
August	52.75@53.00	52.20@52.35	51.90@52.15	51.65@51.90	51.50@51.65
January	51.10@51.25	50.70@50.90	....@50.25	....@50.10	....@50.00
September	49.75@52.00	49.75@51.50	49.75@51.25	49.75@51.25	49.75@51.00
October	48.50@51.50	48.50@50.50	48.75@50.50	48.75@50.25	48.75@50.25

NIACIN

New York: Trend firm; $3 kilo, 50-kilo lots; $3.10 kilo, 10-kilo lots; $3.20 kilo, 5-kilo lots; $3.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Minneapolis: Market steady; demand fair; quotations: $77@80, standard pulverized $40@41.50, feeding oatmeal $66@69, reground oat feed $14@16, feeding oatmeal $56.50.

Boston: Demand steady; supply adequate; Canadian white pulverized $48; domestic ground, mixed $41.50; reground oat feed $19.50.

Portland: Demand slow; supply ample; trend unchanged; rolled $62, ground $59, cleaned $62.

Milwaukee: Demand and supply fair; pulverized, white $41.75, feed $40.75; molasses oat feed $35; reground oats, 3% $15, 5% $18.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $19.50@20.50; pulverized white oats $46@47; rolled oats $62@86.

Seattle: Demand and trend steady; supply good; feed oats $61 ton, ground oats $61 ton, rolled oats $65 ton, all ex-warehouse, l.c.l.

Indianapolis: Demand fair; trend lower; supply sufficient; pulverized mixed oats $42; pulverized white oats $49; crimped oats, white $62; feeding oatmeal $68; rolled white oats $84; No. 2 white oats, recleaned 80¢ bu., sacks extra.

New Orleans: Demand fair; trend steady; supply ample; pulverized white oats $50.50@57, mixed feed oats $43@45.50.

Los Angeles: Demand fair; trend steady; supply ample; white pulverized $64.

Louisville: Demand fair; trend steady; supply normal; reground, easy at $20.85 ton. All other products steady, with rolled oats $82.85, feeding oatmeal $76.85, pulverized oats $47.35, crimped white oats $65.35.

Chicago: Demand slow; supply adequate; reground oat feed $13.50@14.50; fine ground feeding oatmeal $68@70; feeding rolled oats $77@78.

Philadelphia: Demand dull to fair; supplies fair to scarce; pulverized white oats $50; Canadian oat feed $23.50, nominal; domestic $21.

OYSTER SHELL

Boston: Demand and supply steady; in paper $21.44.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

Portland: Demand good; supply ample; trend unchanged; western $29, eastern $34; granite and crystal grits, both $26.

New Orleans: Demand good; trend firm; supply ample; $15@18 local origin.

Los Angeles: Demand and trend steady; supply ample; local $18.25, eastern $25.

Louisville: Demand good; trend firm; supply normal; $19.39 ton.

Seattle: Demand steady; supply good; trend unchanged; eastern $22 ton, western $28 ton, both ex-warehouse, l.c.l.

PEANUT OIL MEAL

Milwaukee: Demand fair; supply adequate; 26% $55; 45% $75.

PEAT MOSS

Philadelphia: Demand dull; supply ample; $2.90, f.o.b. pier.

Chicago: Demand good; supply ample; $2.95 standard 7½ cu. ft. bale.

Los Angeles: Demand fair; trend steady; supply ample; Canadian $3.40, 200-bale lots, delivered California main line points.

New Orleans: Demand dull; trend steady; supply ample; 100-lb. bales German moss $3.90@4.

San Francisco: Demand fair; supply ample; $3.35 bale.

Boston: Demand steady; supply adequate; $2.90@3 bale.

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; trend steady; supply ample; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; potassium iodide calcium stearate mixture, 225 lb. in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

New York: Trend steady; U.S.P. granular and powder, free flowing powder $1.90 lb. in 200-lb. lots $1.92 lb. in 100-lb. lots, $1.95 lb. in 25-lb. lots; 90% KI in calcium stearate, calcium carbonate or magnesium carbonate mixtures, $1.81 lb. in 200- and 250-lb. lots, $1.83 lb. in 100-lb. lots, $1.86 lb. in 25-lb. lots, f.o.b. New Jersey; freight prepaid except on 25-lb. lots.

RIBOFLAVIN

New York: Trend firm; feed grade (in feed supplements): 6¢ gram in 3.63 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

San Francisco: Demand good; supply fair; bran $55, polish $62.

New Orleans: Demand fair; trend steady; supply limited; bran $42@43; no quotes on hulls; Louisiana mills.

Memphis: Demand nil; trend lower; supply limited; bran $32, sacked, f.o.b. Arkansas points.

Atlanta: Demand fair; trend strong; supply limited; bran $46, sacked, immediate.

Los Angeles: Demand and trend steady; supply ample; bran $53.61, California production by rail.

Ft. Worth: Demand fair; supply scarce; carlots, rice bran $36@37, prompt shipment, f.o.b. south Texas rice mills; hulls $2@3, f.o.b. mills.

SCREENINGS

Minneapolis: Market steady; demand improved; supplies ample; country run $18@

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for Nov. 10 and 17:

Bran—	Nov. 10	Nov. 17
November	$35.25@36.00	$35.85@36.25
December	36.50@37.40	36.60@36.75
January	37.75@38.40	....@38.00
February	38.85@39.50	38.75@39.75
March	39.75@40.60	39.75@40.75
April	40.25@41.40	40.75@41.35
Shorts—		
November	$38.25@39.10	$39.55@40.25
December	38.50@39.30	39.50@39.75
January	39.75@40.20	40.55@40.75
February	40.60@41.40	41.00@42.00
March	43.25@43.75	42.80@44.00
April	44.35@44.55	44.10@45.25

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22, lights $5@14, mediums $14@22, heavies $22@30; Canadian $18, bulk, Duluth; Canadian ground $28, sacked, Duluth; flax screenings $20.

Buffalo: Demand and supply fair; trend steady; ground, sacked $31, New York, L. & R.; unground, bulk $24.25, New York.

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $29@30; barley $18@24, both bulk, delivered.

New Orleans: Demand quiet; supply limited; trend steady; 3/84 in. grind $39.50@41.50.

Chicago: Demand improved; supply plentiful; ground grain screenings $31.75; Canadian, bulk $23.75.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Chicago: $22@22.75.
Kansas City: $22.15@22.80.
St. Louis: $21.40@22.
Des Moines: $22.50.
Philadelphia: $21.55@22.15.
Minneapolis: $23.15@23.85.
Buffalo: $22.50@23.10.
Atlanta: $18@18.70.
Memphis: $19.40@19.95.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $2.58@2.60.

Los Angeles: Demand fair; trend steady; supply ample; No. 2 milo, delivered CCF, prompt $3.55.

Ft. Worth: Demand fair; offerings light; carlots, bulk, No. 2 yellow $2.05@2.10, delivered TCP.

SOYBEAN OIL MEAL

Boston: Demand slow; supply plentiful; $47, bulk, Decatur, immediate shipment.

San Francisco: Demand fair; supply ample; $78.57.

Portland: Demand slow; trend lower; supply ample; November $47.50, December $48.50.

Cincinnati: Demand poor; trend steady to lower; supply adequate; $48@49, bulk, Decatur.

Atlanta: Demand slow; trend weak; supply ample; 44% $64.50, sacked, immediate.

Omaha: Demand fair; supply adequate; 44% solvent $64.50; 41% expeller $67, pellets $69.50.

Memphis: Demand slow; trend lower; supply ample; prime 44% solvent $56, sacked, f.o.b. Memphis.

Minneapolis: Market about steady, with demand fair; $45.50@47, bulk, Decatur.

New Orleans: Demand fair; trend steady; supply ample; 40% $70@72.50.

Los Angeles: Demand slow; trend steady; supply ample; $78.07@79.07, delivered CCF.

Kansas City: Market still at a low ebb with demand only fair and offerings adequate; for Kansas City and West around $47, bulk, Decatur; unrestricted $1 ton higher.

Wichita: Demand slow; supply sufficient; 41% $69, f.o.b. Wichita.

Seattle: Demand slow; trend easy; supply good; $79 ton, delivered, carlots, sacked, November shipment.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; large black and gray $17 cwt.; medium black and gray $13 cwt.; small black and gray $9 cwt.

TANKAGE

Chicago: Demand slow; supply adequate; 60% protein $70@75.

Louisville: Demand dull; trend weak; supply heavy; $60@65 ton.

Ft. Worth: Demand slow; supply limited; 60% digester $80@82, f.o.b. Ft. Worth.

Kansas City: Improved offerings and moderate demand has left trend easy; 60% digester $73@77.50, sacked, Kansas City.

Los Angeles: Demand fair; trend steady; supply ample; $1.50 a unit of protein, November-December.

Omaha: Demand good; supply ample; $80.

St. Paul: Market steady to easier, with heavy production and fairly good demand. Quotations: 60% digester $70.

New Orleans: Demand slow; supply ample; trend steady; 60% $85.50@88.

Cincinnati: Demand fair; trend steady; supply adequate; 60% digester $75@80.

Wichita: Demand fair; supply sufficient; 60% $80, f.o.b. plant.

Ft. Worth: Demand slow; supply sufficient; carlots, 44% $69@71, depending on origin; truck lots $65@66.50, prompt, delivered Ft. Worth.

Louisville: Demand only fair; trend continuing weak; supply ample; $59.81 ton.

Decatur: Demand slow; supply adequate; 44% bulk, unrestricted $47.50@48.

Chicago: Sales were somewhat improved during the week ending Nov. 18. Supplies continued plentiful and increased formula feed sales would bring increased demand. Quotations Nov. 16: 44% protein soybean oil meal, unrestricted shipment $57@58.

Ogden: Supply normal; $100@110.

Philadelphia: Demand spotty; supply ample; $47, bulk, Decatur.

WHEAT GERM MEAL

New Orleans: Demand fair; trend steady; supply limited; $67@70.

Buffalo: Demand fair; trend steady; supply poor; commercial grade $70, sacked, f.o.b. Buffalo.

CAGE LAYING

(Continued from page 4)

is that cages are filled all the time instead of as in a floor system where by the end of a year only about half a house is being used. The uniform method of replacements permits the same number of chickens to be raised as in a floor system with only about one third the number of brooders, range shelters, feeders and other equipment.

In the marketing of eggs there is an added advantage to the cage system, Mr. King said, in that the producer can develop a market for his pullet eggs and keep supplying that market. With floor layers, a producer has to develop a market for a large number of pullet eggs and when he finally has it developed he can't supply it because the eggs are mediums.

The cage laying system also virtually eliminates the problem of setting hens and cannibalism, he said.

Disadvantages

As disadvantages, Mr. King listed flies, replacement program and temperature problems.

"We now have the fly problem licked," he said. "Our program calls for the use of lime to dry out the litter and an effective fly killer. The house is cleaned once a year."

Many people don't like the replacement program because of the frequency of vaccinations and otiier such problems, he said. But these problems have been lessened considerably, he pointed out, by replacing only every 10 weeks instead of every month.

The ideal temperature in the cages is 55 degrees, Mr. King said in his explanation of the temperature ranges a layer can stand. Between 50 and 70 degrees in the house there is no serious variation in production. From 80 to 85 degrees feed consumption falls off, from 85 to 90 degrees a hen mostly drinks water and from 95 to 100 degrees there will be some mortality, he stated.

In the downward ranges he said that in the 30-40 degree range, egg production falls off slightly and when the temperature goes below freezing there's trouble. In the 20-25 degree range combs are frozen, and in the 10-20 degree range egg production is lowered considerably.

"In this part of the country that means that a good house is essential. It must have side walls, windows and be insulated," he emphasized.

He pointed out that in Indiana some producers did not heat their houses and experienced only a small drop in production. In Ohio some heated their houses and found the cost to be not entirely out of reason.

Another method of solving the temperature problem is double-decking cages. "But I don't think that method is as efficient as the single deck," he stated.

Turning to some of the technical problems, Mr. King said at Alabama Polytechnic they recommend a cage between 8-10 in. by 16-18 in. in size with wires running crosswise 1 in. apart, with a feed hopper high on the cage, an easily opened door and with a slope on the floor of 2% in. to 18 in. so the eggs roll forward just right.

Special Feed Needed

Feed must be especially designed for cage feeding, he said. It should be all mash with a lower-than-normal salt content and with the calcium and grit mixed into it. He also said that the vitamin D content should be higher than for floor flocks.

The pictures of cage layer operations shown by Mr. Ferguson revealed that the double-deck system is common with Minnesota growers. And he said that they have been having considerable success with it. One producer reported production of a dozen eggs on 12¢ worth of feed. His 576 birds were producing at an 85% average. Another producer reported 75% average production. Mr. Ferguson's pictures showed two systems of double-decking in use in Minnesota—one deck over the other with a dropping board in between, and the other a method of offsetting the upper cage so that droppings fall on the floor.

Mr. Martin reported on the operations of two successful cage farmers in Iowa. One said he had realized $3.87 per bird return in the first year. The other claimed production by a hen of a dozen eggs with 3.41 lb. feed.

Mr. Martin pointed out that in this part of the country, double-decking is virtually essential to offset the higher cost of building better poultry houses. Taking issue with Mr. Pockman, who said his firm wasn't ready to build double-deck cages because of feared problems, Mr. Martin said that he didn't think these problems would be the same as they were 30 years ago because of better knowledge of poultry nutrition and better ventilation.

Cage Fatigue

Cage fatigue was discussed briefly by Prof. King in answer to a question.

"We don't know what causes it," he said. "It's not common in California but it appears some in the South. It seems to occur after the bird has been laying 1½ to 2 months. We can't blame the feed because the rations have been adequate in every respect and changes have not kept the condition from occurring."

However, he said, there are no great losses from it any more. He said that when the hen quits laying after it is taken out of the cage, the condition seems to clear up within a week. Then the hen seems to be all right and goes back into production quickly.

"Farmers are making money on poultry this year," said Leo L. Baumgartner, Litchfield, Minn., secretary-treasurer of the association, during the annual meeting the second day of the convention.

"But," he pointed out, in predicting a bright outlook for 1956, "prices aren't high enough to stimulate overproduction next year. And farmers remember the low prices of 1954 when they kept too many chickens."

Three new directors of the association were elected. They are Ray Hasley of Rochester, Irving Brown of Golden Valley and Lester Nuberg of Wadena. Lester Linton of Northfield and Lloyd Stone of Madelia were re-elected directors.

Dr. Paul Waibel, poultry nutritionist at the University of Minnesota, spoke the final day on "the tremendous progress in poultry feeding during the past 50 years. He illustrated his talk with a live exhibit.

Frankford, Del., Firm To Rebuild Facilities

FRANKFORD, DEL.—Facilities of Murray's Feed Service, Inc., which were destroyed by fire Nov. 3 will be rebuilt in the near future, it was announced this week by M. W. Fell, company vice president.

The main building of the company on Daisy Street was consumed by the flames, but the grain elevator, grain drier and all grain handling facilities of the firm were not damaged and were back in operation a day after the fire.

The loss of the building, including machinery, equipment and stock in it, was adequately covered by insurance, Mr. Fell said.

Murray's had been renting the Shore Tuxedo plant of the Early & Daniel Co. in Frankford and since the fire has been able to provide service for its customers through the facilities in that plant.

Construction of a new push-button feed mill was started in the early part of October, said Mr. Fell, and this unit is expected to be in operation within six months.

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OHIO CONFERENCE

(Continued from page 7)

tion needed than has been available previously.

Dr. Waddell observed that a similar quantitative relationship exists between the energy level and requirements for other amino acids has been indicated by the work of several laboratories. It has been shown that the balance between energy and protein has a pronounced effect not only on growth and efficiency of feed utilization, but also on body composition.

At present there is some lack of agreement as to the exact ratio between these two nutrients to produce optimal results, he said.

Problem Panel

A panel discussion of feed industry problems was moderated by Dr. E. I. Robertson, John W. Eshelman & Sons, Lancaster, Pa. Appearing on the panel were: Richard Cochran, Ohio Farm Bureau, Columbus; Robert Kemper, Early & Daniel Co., Cincinnati; Martin Schultz, Urbana (Ohio) Mills; and Nelson F. Richards, Richards Milling Co., Cortland.

Mr. Cochran said that the production man has become the foregotten man in the feed industry. From his standpoint the production man would like to produce just one feed composed of two or not more than three ingredients, ship in straight thirty-ton carloads and have all his orders at least ten days in advance.

"What is he asked to do, however," he asked. "He is asked to manufacture some 60 to 80 different formulas containing up to 30 or more ingredients per formula, some of which are added in the amount of a teaspoonful per ton; to package these feeds in some 50 different packages; to do all this with facilities and equipment for the most part that are simply archaic holdovers from the early grain industry; to ship these feeds in antiquated boxcars requiring a packhorse type loading crew."

Mr. Cochran lauded the dedication of the feed technology program at Kansas State College and urged that this important first consideration of production problems be followed up with a continuing consideration of all phases of the feed industry for a more effective job.

Present day requirements of the customers have greatly increased the problems of the feed mixer in the last two decades, said Mr. Kemper. Research in nutrition covering trace minerals, vitamins, proteins and energy materials, as well as drug research in antibiotics, coccidiostats, hormones, arsenicals, and others, have presented unusually complicated mixtures that are a strain on production. With proper equipment and know-how, however, he observed, problems are surmounted easily except when handling hormones. That is the present headache, he concluded.

The effect of specialization in farming on the feed industry was appraised by Mr. Schultz. He pointed out that there has been a definite trend towards specialized farming especially in poultry and livestock production, and virtually is an accomplished fact in broiler and turkey production.

In his presentation on mobile milling, Mr. Richards brought out these points:

1. The modern mobile mill works—reliably and efficiently.
2. Farmers like the product and the service.
3. Owners and operators make a real profit.

During his discussion of gestation rations for swine, Dr. H. S. Teague, OAES, told of experiments using legumes to bring about increased productive performance in the dry lot brood sow.

Using gilts, he said, it was shown that when either an 18% sun-cured alfalfa or a highly fortified legume-free ration was fed prior to breeding and through the gestation period an average of 1.19 more live pigs were farrowed by those which received 18% alfalfa. The ration fed did not appear to influence the vigor nor the liveweight of the pigs at birth. A greater percentage of the pigs farrowed by alfalfa-fed females lived to weaning age.

Dr. J. W. Hibbs, OAES, told of using Vitamin D to prevent milk fever. The method, developed at OAES, involves the substitution for low parathyroid activity by feeding large amounts of vitamin D for a few days before calving. This has been shown to effectively maintain a high level of blood calcium during the critical period following calving and thus prevent milk fever. Briefly the procedure consists of feeding up to 30 million units of vitamin D per day, for 5 to 7 days before the calf is born.

Reporting on the addition of arsenic compounds to swine rations, Dr. Richard F. Wilson, OSU, said that although a growth response has been reported in some cases from the use of both arsanilic acid and 3-nitro-4-hydroxyphenyl arsonic acid in rations, the advisability of including arsenicals in rations as regular supplements is questionable. The data indicate a tendency for arsenicals to increase feed efficiency but the increases have not been significant. More studies need to be made regarding the inclusion of arsenicals in swine rations, particularly now that a large share of the growing rations contain one or more antibiotics.

GRAIN MAN DIES

BUFFALO—John P. Meagher, 67, well known in this area in the grain business, died recently. Mr. Meagher became treasurer of the Marine Elevator Co., now the Norris Grain Co., in 1947. He was a director of the company and traffic manager for the Abell Forwarding Co., Inc.

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MARKETS

(Continued from page 1)

Operations were maintained this week at about the same level as in the previous period.

Northeast

Formula feed sales were down a little last week, except in the New England area where demand was reported to be good.

Broiler prices firmed surprisingly in the face of the turkey season. Eggs also moved upward, with instances of a 1@4¢ gain in prices. Broiler replacements are going along at a good clip, and one trade source said, "it looks as though the market may hold up for a while."

Egg mashes are moving well and turkey breeder feeds are expected to revive. Dairy feed demand has shown an improvement despite the lack of a snow cover, and late reports of colder weather and snow are expected to accelerate demand.

During the week soybean oil meal moved down $1 and cottonseed oil meal declined a like amount. Linseed oil meal held unchanged. Distillers grains were slow but steaady. Brewers grains were firm and 50¢@$1 higher. Meat scraps and tankage held about steady.

Oats were firm and it was said that some elevators are making efforts to dispose of their oats in order to make storage room for corn. Barley was unchanged and corn declined 2¢. Domestic supplies of feed wheat are pretty well cleaned up but offerings are coming in from Canada.

Mill running time of formula feed manufacturers didn't average much more than 40 hours last week.

Millfeed sales continued slow, and there still is an oversupply in the East. Medium and large mixers are buying meagerly and on a spot basis. Country buying is also scanty. Bran was off $3 but rallied slightly and ended the week $2.50 lower.

Southeast

Slow feed demand prevailed again this week in the Southeast. Unusually warm weather has not helped the situation. Some areas have received needed rain to relieve minor drouth conditions, but in general the mild open weather has curtailed feed buying.

The north Georgia broiler prices have advanced from recently established lows, but prices are still relatively low and most producers claim a losing operation. Feed manufacturers who deal on a cash basis seem to be suffering more at this time than those who are extending credit to the poultry growers. Cash customers have either turned to credit or halted operations until better prices are possible. This leads to very poor demand, particularly from the small independent feed mixers.

Inventories of feed ingredients are beginning to build up, which further demoralizes the thinking of the feed trade. Citrus pulp demand has been considerably better this week due to price declines on new crop production as against old crop prices. Production is holding fairly well and should increase steadily in the near future. The southeastern soybean harvest is rapidly drawing to a close, while there are rumors circulating that there will very possibly be some peanut meal available in the not too distant future. Feed prices have declined in most areas, but feed ratios still are not considered good.

Central States

Formula feed sales were very slow in the central states during the week ending Nov. 16. Feed mills looked for some pickup in the week ahead, although nothing extensive was anticipated.

It was still generally agreed that much colder weather in this area would stimulate sales somewhat. Cattle still are on pasture in some areas although they now are coming into feedlots in greater numbers.

The most important factor in the over-all slow demand, however, was thought to be the poor feeding ratios. Hog feed sales slowed down somewhat, due to a drop in current pork prices. Also, feed prices were weak for the period.

Most mills are operating four or five days with light backlogs.

Ohio Valley

Sales of formula feeds improved somewhat this week in the Ohio Valley, but the volume continued far from satisfactory. Dominating factors

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continue to be the weather and the price situation, and until there is a break in one or the other, it seems likely there will be no appreciable improvement in business.

Manufacturers and retailers alike were disappointed this week when repeated forecasts of colder weather failed to materialize. Instead, temperatures have continued at summertime levels, with an all-time November heat record having been set in this area last week end. As a result, there still is ample pasturage, along with plentiful farm crops. Because of the slump in meat prices farmers are appreciative of this situation, but it naturally is reacting unfavorably on formula feed sales.

Prices again eased off this week some 25@50¢ ton, and the steady price decline, noted during recent weeks, may have had a slightly favorable effect on sales. Area mills reported their operations were up some 10% to about 60% of capacities, with five-day, one-shift operations being the general schedule.

Pacific Northwest

The formula feed business continued quiet, and a sudden cold snap did little or nothing to stimulate it. Weather records were broken right and left during the week, with the coldest November weather for 50 years being recorded.

However, much of the activity in the feed trade involved the search for hay and straw, the latter in particular being very hard to locate. Feed millers stated that demand for dairy feeds show signs of picking up, because pastures are unusable at present and doubtless will be during the balance of the winter. However, turkey feed volume is going down steadily, and broiler production is also slackening off in the face of declining prices. Demand for laying rations has not been stimulated to any noticeable extent, and the whole picture remains dull and quiet.

Hay prices advanced a dollar or so per ton on the basis of the cold weather, but millfeed was draggy and there was little demand. Japanese interest has dried up, and the local trade is pretty well booked up, so there was nothing in the millfeed outlook to stimulate prices above present levels of about $45 ton.

New crop Canadian herring meal will be on the market in another few days, based on the definite information that fishing operations are under way, and while the nominal price remains $240 a unit of protein f.o.b. Vancouver, and a few cars are said to have been booked on this basis, most of the trade is sitting back and awaiting developments, feeling that the price must certainly move down. This feeling is based on the fact that meat scraps are about $140 a unit of protein at Seattle, and there is no life to the soybean meal market.

Formula feed prices were unchanged to slightly lower.

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